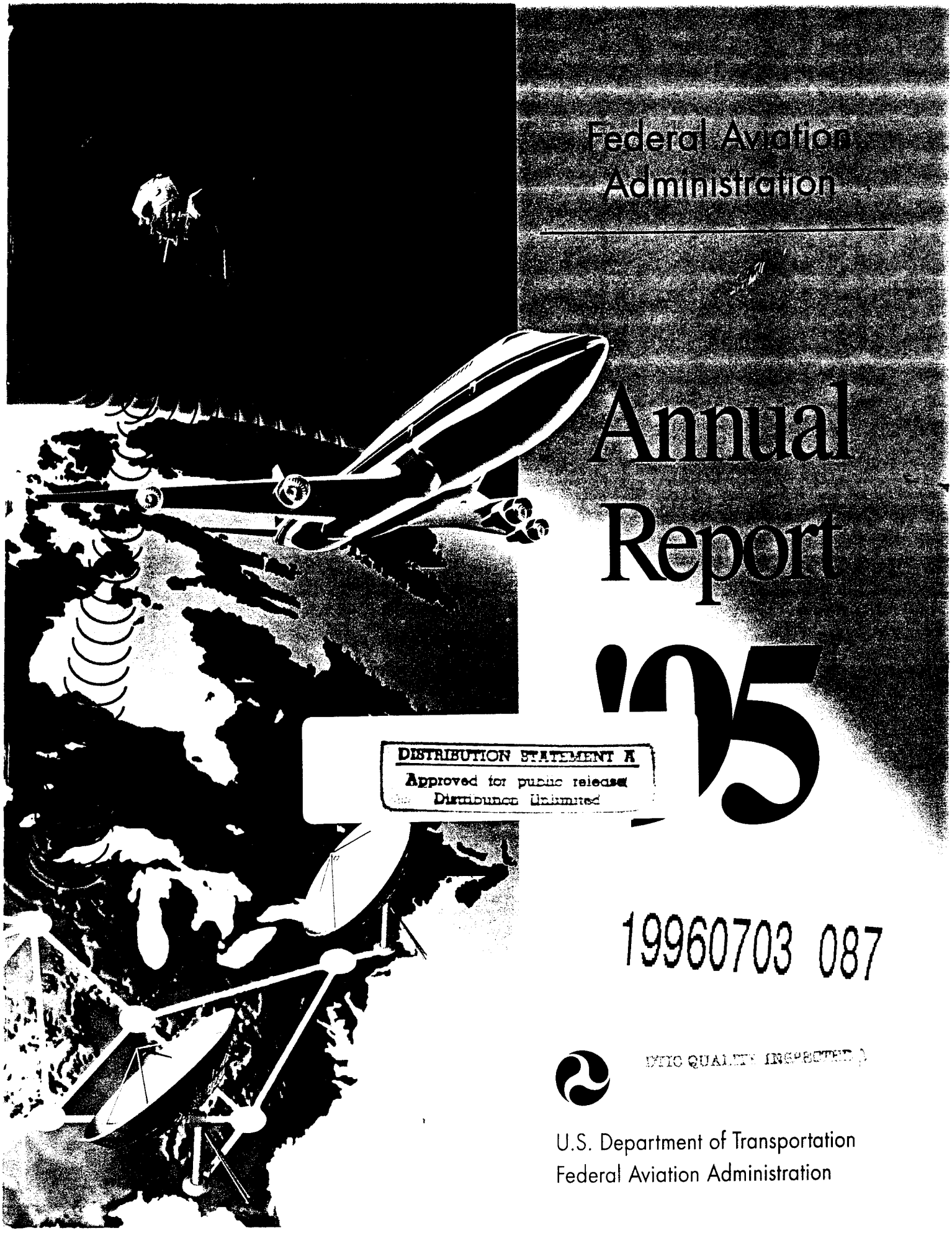

Federal Aviation Administration

Annual Report '95

U.S. Department of Transportation
Federal Aviation Administration

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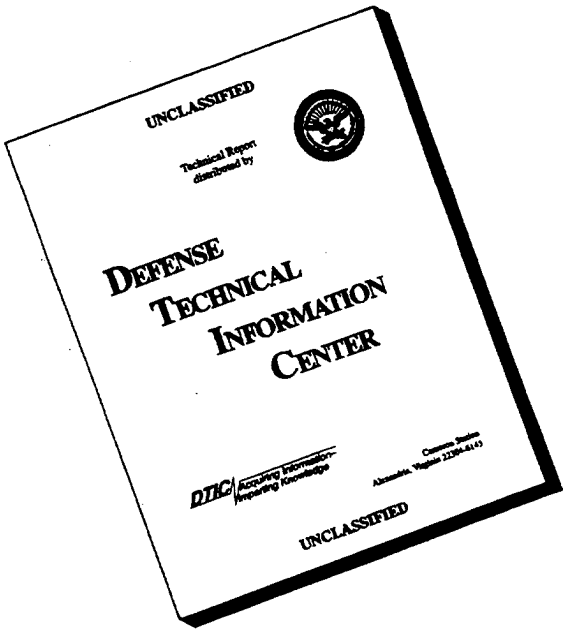

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Cover:
The FAA is speeding satellite technology to the cockpit with the development of the Wide Area Augmentation System: a network of ground reference stations supported by land- and space-based communication systems.

WAAS illustration courtesy:
FAA Integrated Product Team for GPS Navigation.

A MESSAGE FROM THE ADMINISTRATOR

This past year, we caught a clear glimpse of our future. Many of our long-range plans and projects, once sketchy and tentative, took definite shape. In 1995, the outlines of the future began to fill in rapidly.

After many months of debate, the FAA now has authority to start remaking itself into a model Federal agency. The 1996 Transportation Appropriation bill gave us much of the flexibility we have long sought in acquisition and personnel policies. We intend to take full advantage of this opportunity to introduce appropriate best business practices to the management of the agency. I am hopeful that the current year will see equal progress in finding a fiscally sound solution to the problem of our future funding needs which threatens our advances in all areas.

Throughout 1995, we continued the complex task of rebuilding our system of air traffic management around a new core of advanced technologies. On any average workday last year, the FAA commissioned five, sometimes six, new systems throughout the United States. The total value exceeded a billion dollars. As these systems are phased in, day after day, we are steadily shifting to the next generation of air traffic control technology.

In October, we passed an especially significant milestone. We began the routine use of oceanic data link at the Oakland Air Route Traffic Control Center. Using two-way satellite communications, this breakthrough technology provides—for the first time in history—accurate, timely, and direct pilot-to-controller communications over oceans and other remote areas once out of range of ground-based radar.

Satellite data link is the outcome of a unique international partnership created 2 years ago. This joint undertaking of manufacturers, airlines, and service providers is dedicated to the more rapid introduction of promising new technologies.

Finally, we saw in 1995 the start of what I believe will be a fundamentally different approach to aviation safety in the years ahead. Last January, Secretary Peña and I met with more than 1,000 aviation executives to identify what Government and industry, working together, must do to reduce the few remaining hazards to air travel. As a direct result of that meeting, the FAA is now speeding action on 173 separate initiatives aimed at attaining our ultimate goal of zero accidents.

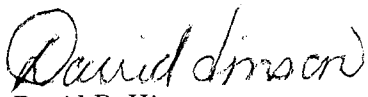
To achieve this ultimate level of safety, we must reorient our thinking to emphasize the search for potential causes of accidents rather than rely on the findings of post-accident investigations. This proactive strategy requires an unprecedented level of data sharing which depends, in turn, on a high level of trust and voluntary cooperation between the industry and the FAA.

One of the most noteworthy achievements of the Aviation Safety Conference, in my view, was the agreement by the participants on the critical importance of data sharing. A cooperative arrangement already exists for analyzing information from onboard flight recorders, collected as part of the flight operations quality assurance program. This experience should be relevant in developing the procedures and safeguards necessary to make much more extensive information available to the entire aviation community.

Safety is never a static concept. It evolves with technology and the changing structure of the industry. The rapid expansion of commuter air travel, for example, prompted a comprehensive set of new initiatives in 1995 to ensure "one level of safety" for all passengers. The first of these initiatives, the Commuter Safety Rule, was achieved in record time. This new rule requires commuter airlines to meet the same rigorous safety standards as the large carriers.

As we review the key events of last year, we see a pattern of completion: the FAA now has the freedom and flexibility to make itself a more productive and efficient organization. Some of our most advanced concepts in air traffic management are being introduced into daily operation. We are beginning to apply powerful tools of information gathering and analysis to raise our already high standards of aviation safety further.

The FAA Annual Report for 1995 contains many other examples of long-term investments that are now beginning to yield long-promised benefits. I am confident that this theme will be even more evident in next year's report.



David R. Hinson
Administrator

Table of Contents

Federal Aviation Administration

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Airway Facilities	AAF
System Capacity	ASC
Independent Operational Test and Evaluation	ATQ

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Aviation Research	AAR
Communications, Navigation and Surveillance Systems	AND
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Regional Administrators	

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- Space Policy
- Licensing and Safety

OVERVIEW

A full year before Charles Lindberg's solo flight across the Atlantic, Congress passed the Air Commerce Act of 1926, entrusting to a single agency the authority to regulate and foster civil aviation development. From that time forward, the U.S. Government has provided for the safe and orderly growth of civil aviation and the management of the Nation's airways.

For many years, aviation was the responsibility of the Civil Aeronautics Administration within the Commerce Department. The Federal Aviation Administration (FAA) dates from 1958, the same year that jet airplanes entered commercial service in the United States.

Today, the FAA operates and maintains the air traffic control system for both civil and military users, handling an average of two flights per second and daily moving 1.5 million passengers safely to their destinations. It is one of the few nondefense Government services that operates 24-hours a day, 365 days a year. The agency's regulatory and certification authority covers virtually every aspect of aviation and has promoted steadily rising standards of safety throughout the industry.

The release of this year's annual report marks seven decades of Federal involvement in aviation. Each of those 70 years has seen significant advances—in aircraft design, in safety, in airport infrastructure, in air traffic management, and in the growth of air travel. There is not a single year without notable achievements in the evolution of safe, efficient air transportation.

This year continues that impressive record. And, it again demonstrates that progress depends on strong, farsighted leadership from both industry and Government.

The FAA Annual Report for 1995 contains the financial statements of the agency as required by the Chief Financial Officers Act of 1990. It also presents a comprehensive overview of this agency's leadership in dealing with a vast range of complex issues. The fast-changing nature of these issues required a form of organization better attuned to the character of the times. One exercise of FAA's leadership during the year was to realign its organizational structure to more rationally correspond to its main lines of business activity.

The FAA's Seven Lines of Business. To meet the challenges of doing business in the existing environment of diminished financial resources and increased customer expectations, the FAA, in FY 1995, introduced a new streamlined organization, structured along its principal lines of business. The new organization established a single point of accountability for six major products and services: regulation and certification, air traffic services, research and acquisition, airports, civil aviation security, and administration. A seventh line of business, commercial space, was added in November 1995.

By refining the agency's internal operations and increasing management accountability, the new structure provides the FAA with increased efficiency and more flexible management decision-making. The reorganization also focuses resources on the agency's number one mission: aviation safety.

EVENTS THAT SHAPED FY 1995

Aviation Safety Conference. In January, Department of Transportation Secretary Federico Peña and Administrator David Hinson hosted a safety conference which brought together 1,000 top aviation experts. The 2-day "safety summit" resulted in an FAA Safety Action Plan detailing 173 initiatives to improve aviation safety and achieve the goals of zero accidents and shared responsibility adopted by the conferees. Since the meeting, 70 of the 173 initiatives

From left to right, Administrator David Hinson, Secretary Federico Peña, and Commuter Air Taxi Branch Manager Katherine Hakala discuss "one level of safety" rule.

have been completed. One immediate outcome was an agreement with the airlines which will allow the FAA to analyze data collected as part of the airlines' flight operations quality assurance programs.

System Safety Office. A top-level Office of System Safety, reporting directly to the Administrator, was established to ensure that the best possible data about aviation safety is incorporated into the agency's decision-making. Among its projects is a proposed electronic international data exchange network that will help the FAA and industry spotlight problems and learn important safety lessons before an accident occurs.

Commuter Safety Initiative. In December 1994, DOT and FAA announced a major initiative to propose to upgrade the safety standards for commuter airlines to the same levels as those for major airlines. Operating on an accelerated schedule, a DOT/FAA team produced a notice of proposed rulemaking (NPRM) in only 100 days for the most comprehensive set of changes ever proposed in aviation rulemaking. The centerpiece of the set, the new commuter rule, became final on December 14, 1995. Under the final commuter rule, all scheduled airline passenger operations with airplanes having 10 seats or more will be operated under the same safety rules that now apply to larger airplanes. A second final rule, also issued December 14, 1995, increased training requirements for all pilots.

Human Factors. In April 1995, the FAA issued a final rule which established, for the first time, the minimum combined experience that pilots must have in a particular aircraft before they can be scheduled to fly together. The rule was part of the agency's ongoing effort to examine human factors in the cockpit as a means of eliminating errors that result in accidents. In June, the FAA announced a plan to conduct human factors research and apply findings to the operation of the National Airspace System (NAS). This comprehensive national initiative is being undertaken in cooperation with the National Aeronautics and Space Administration (NASA) and the Department of Defense (DOD).

Boeing-737 Review. A nine-member team from the FAA, National Transportation Safety Board, U.S. Air Force, and the Canadian Civil Aviation Authority conducted a 5-month review of the Boeing 737 flight control system design and service history. The team found no design problems that could lead to an accident, but it did make a number of recommendations for design and maintenance improvements.

U.S. Airport Security Strengthened. In August 1995, based upon information provided by law enforcement and intelligence agencies, the FAA increased security measures at U.S. airports.

Explosives Detection System. In December 1994, the FAA certified the first explosives detection system (EDS), the CTX-5000, for use in screening checked baggage.

Access to Airport Secure Areas. Near the close of FY 1995, the FAA issued a rule strengthening security by requiring investigations of persons seeking unescorted access to secure areas of airports. Under the new regulation, individuals applying for positions requiring such access must submit a 10-year employment history. Applicants will be denied access if they have been convicted of certain crimes during that period.

Special Certification Review, ATR-42/72. After exhaustive tests by the FAA and the French Direction Generale de l'Aviation Civile, the FAA issued an airworthiness directive requiring significant changes in the design of the airplanes' wing deicing system. The directive also established comprehensive procedures which must be followed whenever icing is encountered or anticipated.

International Aviation Safety Assessments. To provide the public with more information about possible risks in international air travel, the FAA continued its assessments of foreign countries' capabilities to provide safety oversight of their air carriers that operate in the United States. By the end of November 1995, the agency had assessed a total of 50 nations.

Unapproved Parts Study. The FAA strengthened its campaign against the use of unapproved parts in aviation. Measures included a joint plan with the aviation industry for an industry-operated accreditation program for aircraft brokers and distributors. On the recommendation of a special task force which reviewed the issue, the agency established a national program office on suspected unapproved parts.

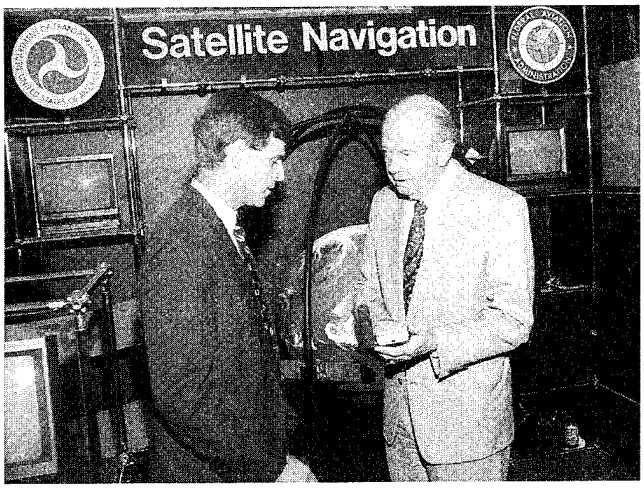
Runway Incursion Action Plan. The 1995 Runway Incursion Action Plan, released in April 1995, outlines specific issues the FAA intends to address as it works to reduce surface errors at the

Nation's more than 570 civil airports. These include reducing human error, improving ground communications, development and implementation of technologies to increase surface guidance and surveillance, as well as improved ground traffic management procedures and equipment.

Computer Replacement. An increasing problem with computer breakdowns at several air route traffic control centers (ARTCC) during the year led the FAA to speed up the installation of a stop-gap system, the display channel complex rehost (DCCR). Intended as a transitional technology in the event the old equipment began to falter before the replacement was ready, the DCCR had been under development almost a year before the decision to speed up its deployment. Other actions to heighten the dependability of older equipment included special training and the hiring of additional technicians. In October 1995, the FAA also awarded a contract to upgrade the backup power supply at air traffic control (ATC) facilities nationwide.

Challenge 2000. In July 1995, the FAA launched Challenge 2000, a comprehensive review of the agency's regulation and certification process. The aim is to ensure that the agency is prepared for the increasing challenges of regulating aviation and certificating rapidly changing technology as the Nation enters the 21st century.

Satellite Navigation. The FAA is moving swiftly to make the transition to space-based technologies. For the past 2 years, the global positioning system (GPS) has been available as a supplemental means of navigation in the United States. GPS was approved by Administrator Hinson for primary navigation on oceanic and remote routes in December 1994. In August 1995, the agency awarded a $475 million contract for the development of a network of wide area augmentation systems (WAAS) to enhance the integrity and availability of GPS signals.



Administrator David Hinson and WAAS project manager, J.C. Johns, examine a GPS Receiver.

Air Traffic Control Automation. In April 1995, the FAA reached an agreement with the Loral Corporation to develop and install new controller workstations for the agency's 21 ARTCC's. Loral was given a separate contract to develop automated systems for local airport towers. The agreement, which is part of the FAA's restructuring of its air traffic modernization program, will result in cost savings to taxpayers and the traveling public as well as increased safety and airspace capacity.

NAS Improvements. By the end of FY 1995, terminal Doppler weather radar (TDWR), a new system which enables air traffic controllers to alert pilots to windshear and other hazardous weather, had been delivered to 30 sites and commissioned at 8 locations. In March 1995, the FAA commissioned the national airspace data interchange network (NADIN), a high-speed data system that enhances controllers' ability to pass information to pilots. Another milestone was reached in June with the commissioning of the first of 21 voice switching and control systems (VSCS) to be deployed at ARTCC's. A total of four VSCS's had been commissioned by the end of November 1995, and a fifth will begin operating in early 1996.

Airport Infrastructure Development. In FY 1995, the FAA's airport planners processed over 1,047 applications totaling $1.45 billion for Federal Airport Improvement Program (AIP) grants-in-aid to improve and expand the Nation's airports. In addition, the FAA's airport planners processed over 90 passenger facility charge (PFC) applications, approving over $1.4 billion in PFC collections to fund almost 750 projects. Airport safety and certification inspectors conducted inspections at 380 airports to ensure that they complied with established safety standards.

National Route Program. Beginning in January 1995, the FAA began offering options that allow aircraft to fly routes preferred by their users to the maximum extent possible. The options are presently available to some 12,000 flights a day.

Managed Arrival Reservoir Program. Introduced in January at four major airports, this program has since expanded to eight airports. The program is designed to make more efficient use of existing capacity.

Revitalizing General Aviation. In FY 1993, the FAA developed the first-ever General Aviation Action Plan. This joint project with the General Aviation Coalition details the agency's commitment to aid in the revitalization of the general aviation industry. The latest plan contains 22 initiatives, 19 of which had been completed by the close of FY 1995.

Reducing Aviation Noise and Emissions. The level of noise at the Nation's airports and surrounding areas continues to decline as airlines take older, noisier aircraft out of service. By the end of 1994, the proportion of quieter (Stage 3) aircraft used by U.S. airlines had grown to 66.3 percent. More than 200 airports are voluntarily participating in an FAA-supported noise compatibility planning program, which makes Federal funds available for airport noise mitigation grants. And, in June 1995, the FAA and NASA agreed to cooperate on a research program to reduce engine emissions.

International Leadership. On September 13, 1995, the United States and the Netherlands signed the first of a generation of revolutionary new bilateral aviation safety agreements. The United States, Canada, and Mexico have entered into a Trilateral Agreement to find new ways to improve the flow of traffic among the three countries. In October 1994, the International Civil Aviation Organization (ICAO) formally accepted the U.S. offer of GPS as a component of the future global navigation satellite system. The FAA continues to exercise strong leadership for the worldwide implementation of the new concept.

Streamlining. The FAA further reduced its work force without an adverse impact on safety. In FY 1995, the agency's full time permanent workforce fell from 48,357 to 47,687, a reduction of 690. Total employment, including part-time and temporary employees, was reduced by 817 during the fiscal year. Since FY 1992, the FAA has reduced full-time employment by 4,665. An additional reduction of 528 other than full-time permanent appointments was achieved during the same period, for a total employment reduction of 5,194. In addition, the ongoing realignment of the Airway Facilities organization successfully reduced overhead expenses, management layers, and the number of field offices. Throughout the FAA, the ratio of managers to nonsupervisory personnel continued to improve.

On-Board Full-Time Permanent Appointments

(By Appropriation and Program Category)

	FY 1992	FY 1993	FY 1994	FY 1995	Change
Operations Appropriation:					
Air Traffic	26,941	26,233	24,919	24,358	-2,583
Systems Maintenance	10,108	10,031	9,417	9,140	-968
NAS Logistics	1,464	1,299	1,208	1,201	-263
Aviation Regulation & Certification	5,573	5,490	5,144	5,515	-58
Civil Aviation Security	852	831	772	743	-109
NAS Design & Management	430	556	512	567	137
Administration of Airports	507	506	447	450	-57
Human Resource Management	1,492	1,429	1,163	1,050	-442
Direction, Staff & Support	1,357	1,361	1,193	1,156	-201
Headquarters Administration	482	463	443	382	-100
Aviation Safety		69	55	33	33
Total Operations Appropriation	**49,206**	**48,268**	**45,273**	**44,595**	**-4,611**
Facilities & Equipment	**2,066**	**2,270**	**2,117**	**2,139**	**73**
Research, Engineering & Development	**624**	**639**	**584**	**586**	**-38**
Reimbursable	**456**	**462**	**383**	**367**	**-89**
Total All Appropriations	**52,352**	**51,639**	**48,357**	**47,687**	**-4,665**

Note: The change in total employment, including other than full-time permanent positions, from FY 1992 to FY 1995 was a reduction of 5,194.

LOOKING AHEAD TO FY 1996

The FY 1996 Transportation Appropriations Bill, recently signed by President Clinton, provides the FAA with the authority to remake its personnel and procurement systems and the flexibility to operate more like an efficient, cost-effective business. This is an unprecedented opportunity for constructive change, and the agency is working to take full advantage of it.

While these reforms are critically important, they do not address the long-term financial viability of the agency which is essential if the FAA is to maintain and improve the safety and efficiency of the aviation system. To manage the future growth of aviation, the FAA needs a predictable source of revenue that will grow along with the agency's increasing workload. The Congress is expected to address this issue during 1996.

The Clinton Administration has endorsed the Air Traffic Management System Performance Improvement Act of 1995 (S. 1239), a bi-partisan bill sponsored by Senators McCain/Ford/Hollings and Congressman Bob Clement. This measure would move the FAA from a tax-based system to a user-fee system, freeing the FAA from the constraints of the annual budget process, providing a stable revenue stream by requiring users to pay a fair share for the services they receive, and promoting operational efficiencies.

While awaiting future congressional action on revenue and funding reform, agency management, in consultation with employees and their representatives, outside experts, and the aviation community, has begun to implement the changes already authorized in procurement and personnel policies. The goal, as stated by Administrator David Hinson and Deputy Administrator Linda Hall Daschle, is to make sure the "reformed" FAA will become the premier Federal agency in Government, working better and costing less.

MISSION PERFORMANCE INDICATORS

The FAA measures and tracks its performance at two levels. Individual managers monitor, in detail, the projects and programs for which they are responsible. Senior management relies on a series of agency-wide performance indicators which give them an overall view of how all the various programs are working together to improve the national air transportation system.

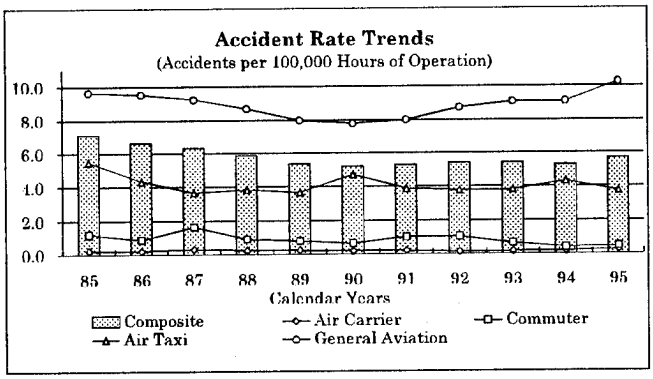
As the agency continues to improve its management processes to comply with both the Chief Financial Officers Act and the Government Performance Results Act (GPRA), many new efforts are underway. The Airways Facilities Service is developing new measures of performance in conjunction with its participation as a GPRA pilot project. The Office of Policy and Plans has been augmenting the agency's strategic planning process to meet the provisions of GPRA, including the development of quantitative measures of accomplishment. The newly formed Office of Business Information and Consultation is working to institutionalize the agency's business planning process by developing customer service standards and other quantitative performance measures. The Office of System Capacity has formed a cross-functional group to coordinate and integrate the development of predictability, flexibility, and access performance measures for the air traffic control (ATC) system. Finally, the Office of Financial Services is working with other groups within the FAA to clarify roles and responsibilities in an effort to integrate the existing strategic planning, budget, business planning, and annual report processes.

SAFETY

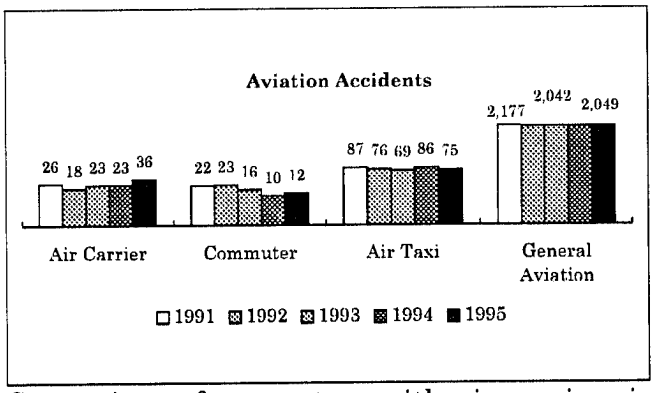
Safety is the primary mission of the FAA and, consequently, measures of safety are the principal performance indicators for the agency.

The primary measure is the accident rate, calculated per 100,000 hours of operation (to normalize the number of accidents by level of exposure).

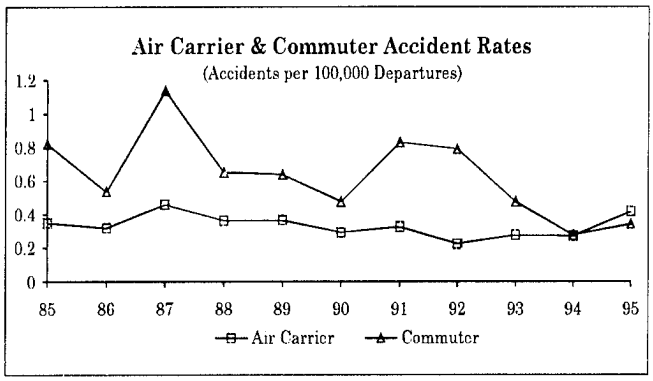
The accident rate for 1995 is consistent with the trend seen for a number of years. Very low rates for scheduled carriers, steady improvement by commuters, and somewhat higher rates for general aviation and air taxis. The rate did increase slightly during the year for air carriers, commuters, and general aviation (air taxis produced a slightly lower rate). The FAA took aggressive action in 1995 to assure that the long-term trend will continue. These steps included the convening of an "Aviation Safety Summit," the development of an Aviation Safety Action Plan, and the publication of several new rulemakings.

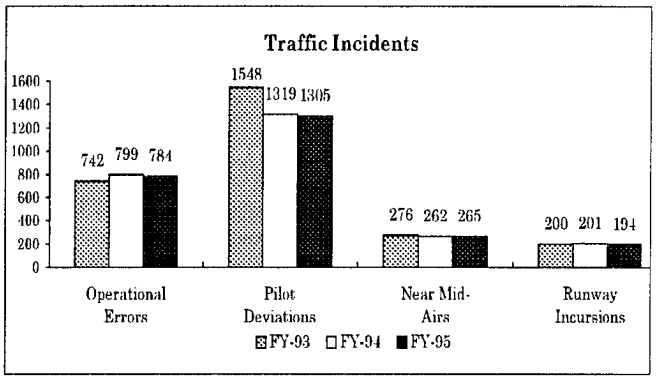


In addition to the accident rate per hour of operation, the FAA also monitors the absolute number of accidents. These data are displayed in the chart below for fiscal years 1991 through 1995. Substantial gains have been made in reducing the number of commuter plane and air taxi accidents. General aviation also had fewer accidents, although the rate is higher because of decreased levels of activity.



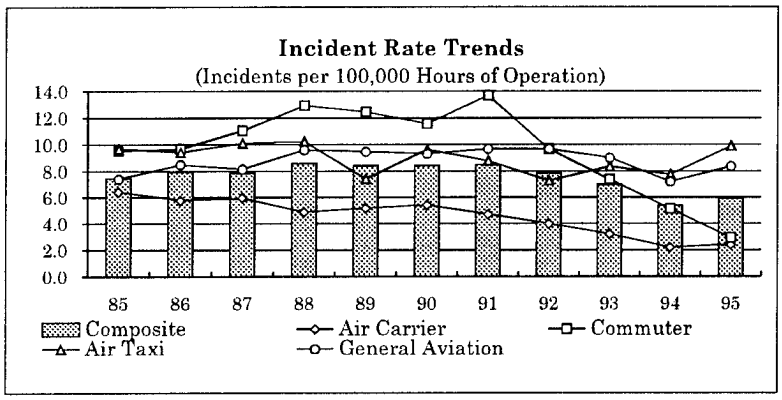
Comparison of commuters with air carriers is complicated by the fact that, because commuters fly shorter routes, they are involved in more takeoffs and landings (when most accidents occur). One way to correct this bias in performance measurement is to plot the number of accidents per 100,000 departures. The following chart shows that what was once a wide discrepancy between the major carriers and commuters has virtually disappeared. The new "one level of safety" rule for commuters, published in December 1995, will reinforce this trend.

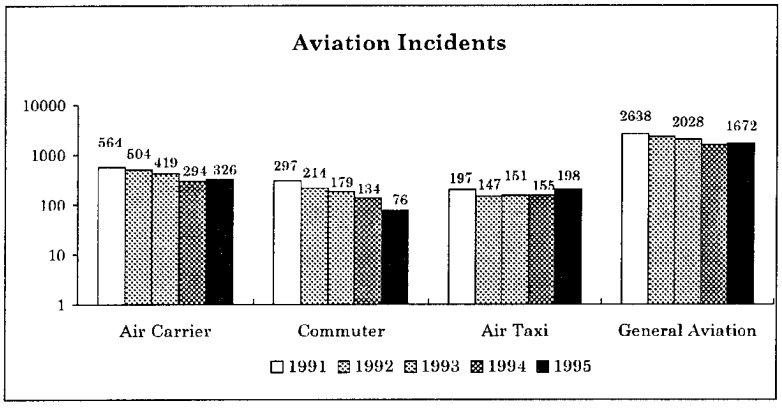




Since air carrier and commuter accidents are relatively rare occurrences, considering the high level of activity, accident rates alone do not adequately represent the status of aviation safety. For this reason, the FAA systematically gathers data on incidents and events which are potentially dangerous, even though they do not result in an actual accident.

The chart "Incident Rate Trends" traces the general pattern of decline in incidents (per 100,000 hours of operation), especially for air carriers and commuters. The actual number of incidents also continued to decrease for carriers, commuters, and general aviation.



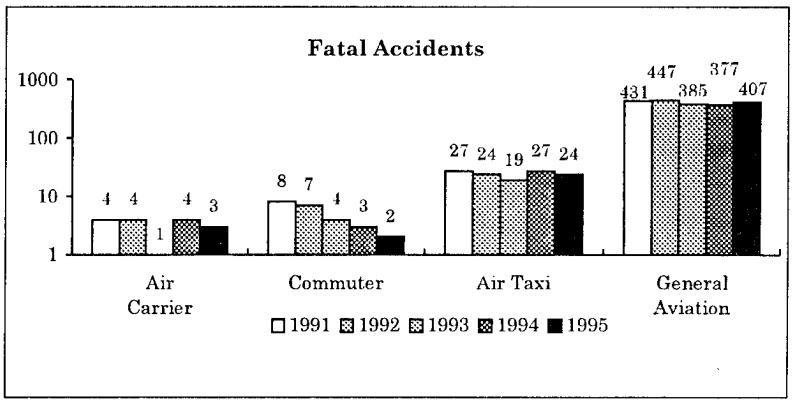


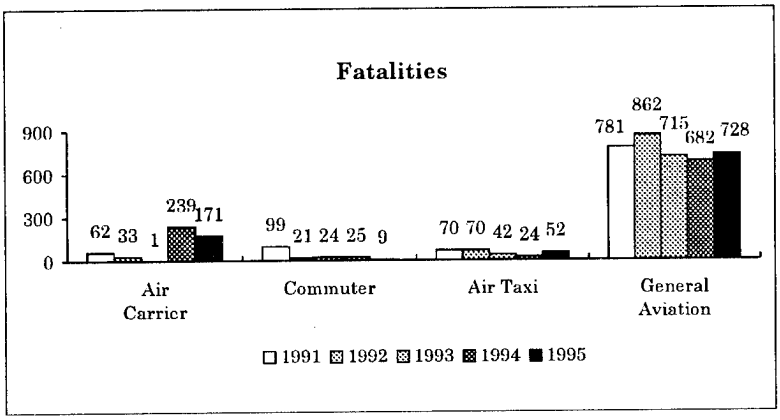
Another occurrence which the FAA constantly monitors is traffic incidents. These fall into four categories: operational errors (in which planes come into closer proximity to each other than FAA rules permit, either on the ground or in the air), pilot deviations (in which pilots fail to follow regulations), near-midair collisions, and runway incursions. The above chart shows the frequency of these incidents over the last 3 years.

Three of the four categories show improvement since 1993, and operational errors declined from the 1994 level.

Much of the FAA's effort is directed toward reducing the number and rate of accidents and incidents. At the same time, the agency recognizes the importance of lessening the severity of accidents when they do occur. A number of FAA actions aim to prevent passenger injury and death, and progress can be seen in the following charts.

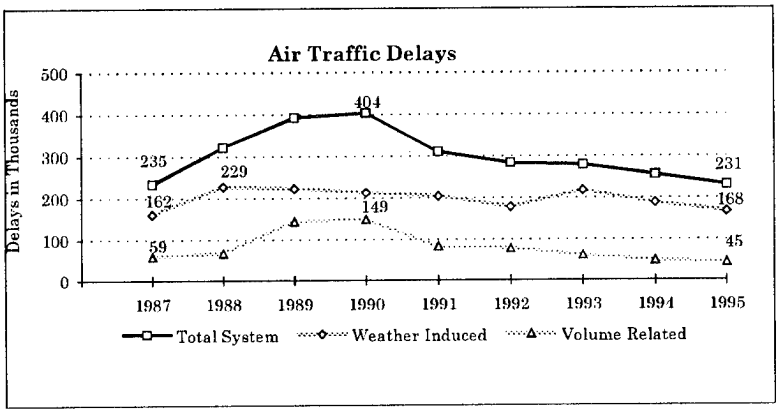
While general aviation exceeds all other categories in both the number of fatal accidents and fatalities, both measures were lower for the commuters and air taxis. Particularly, significant gains have been achieved since 1991 in reducing the severity of accidents involving commuter aircraft.





attributed to the privatization of many low-level activity FAA towers this year, rather than an actual decline in overall activity. Instrument traffic at both terminals and en route shows a modest increase. Activity at the flight service stations continued to decline, reflecting, in part, the agency's continued automation of services to general aviation pilots.

Delay is another measure of the agency's efficiency. The FAA monitors its performance in term of delays of 15 minutes or more that are attributable to the ATC system. Not all delay, however, is attributable to the ATC system. Weather, for example, accounts for more than 70 percent of all delays. Weather-induced delays have remained relatively constant, fluctuating around 200,000 delays per year. Delays caused by the volume of traffic have decreased by more than 40 percent since FY 1990.

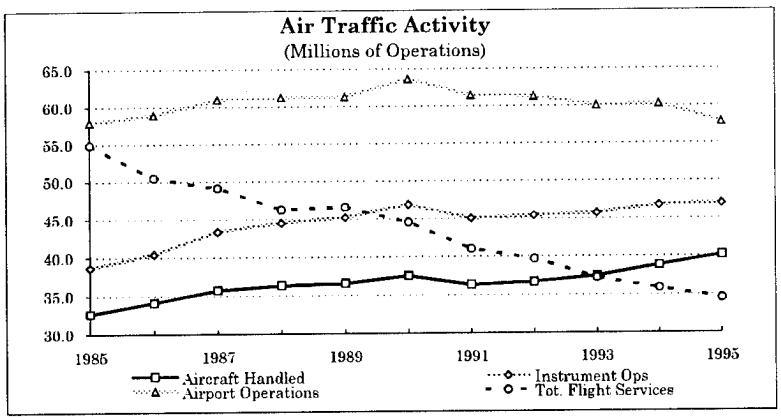


Government and industry research programs have fostered improvements in cabin safety, advanced fire protection, and aircraft crashworthiness which have saved hundreds of lives. Over the past 10 years in the United States, more than half the commercial airline passengers survived accidents where there was a total loss of the aircraft.

EFFICIENCY OF THE SYSTEM

FAA collects many measures of aviation activity. The measure of en route traffic is "aircraft handled": one count for each flight handled by each center. Airport operations are the count of all takeoffs and landings at FAA-towered airports. Instrument operations are the count of aircraft using navigation signals and instructions from controllers. Instrument operations are measures of high altitude flying or flight during inclement conditions where radar tracking is involved. "Total Flight Services" is the measure of activity at flight service stations. It combines the counts of aircraft contacts with pilot briefings and flight plans using a formula.

The "Air Traffic Activity" chart shows that activity at airports with FAA air traffic control services, after remaining relatively constant for the previous 4 years, declined in FY 1995. This decline is

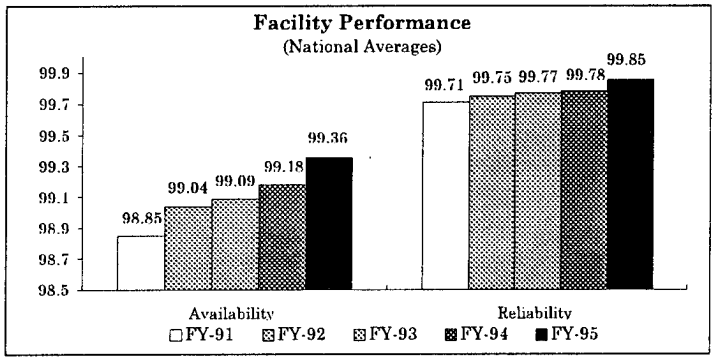


The size and complexity of the FAA air traffic system is conveyed by the growth in the number of major facilities. In FY 1995, for example, the agency added some 755 major new facilities. Most of these operate around the clock, 365 days a year.

The complexity of equipment is also increasing as the agency's modernization program progresses. One example of the changing mix of technology is the airport surveillance radar (ASR). The state-of-the-art ASR-9, which did not exist 10 years ago, now operates at almost 50 percent of all sites.

Additional capital investment performance goals and measures are being developed in cooperation with the managers of the newly restructured lines of business. The Air Traffic Services, Research and Acquisitions, and Regulation and Certification lines of

business will include performance goals in the FY 1997 Facilities and Equipment and the Research, Engineering and Development budget requests.

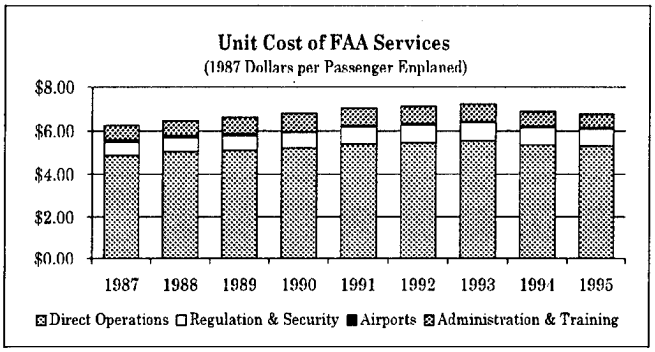


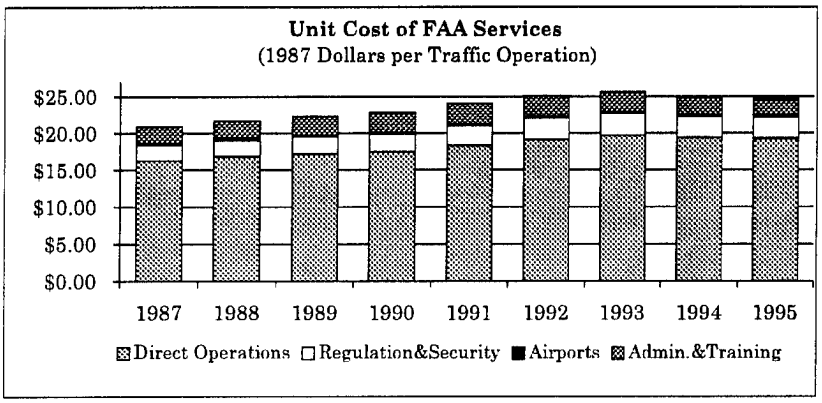
The graph titled "Facility Performance" measures reliability and maintainability. A sampling of other measures being considered as candidates for inclusion in future reports includes: average age of equipment; average age of facilities; mean-time-between-failure rates; environmental cleanups completed versus number outstanding; inventory on hand versus equipment installed; ratio of dollars spent managing procurements compared to actual equipment cost; aircraft fuel savings realized; and capacity growth.

The FAA measures the overall efficiency of equipment in the ATC system in terms of availability and reliability. Over 25,000 separate facilities are monitored. Reliability is a measure of the probability that the component will not fail. Availability is measured as the percentage of time a facility is available for use. National averages for both measures are presented. Viewed in the aggregate, both availability and reliability are extremely high.

One way to measure the FAA's operating productivity is by looking at the unit cost of service to the public. Unit cost per operation provides a relative measure of costs per aircraft flight. Unit cost per revenue passenger measures how well the agency serves the traveling public. To compare over multiple years, annual obligations have been converted to a constant 1987 dollar base. In the first chart, total operations (airport+instrument+en route) are divided by FAA Operations appropriation obligations to calculate a unit cost in dollars per operations.

In the second chart, the count of revenue passengers boarding planes is divided by annual obligations to obtain a unit cost in dollars per passenger enplaned. Both charts show that, in FY 1994 and FY 1995, the FAA decreased the unit cost of its services, reversing a trend of several years.

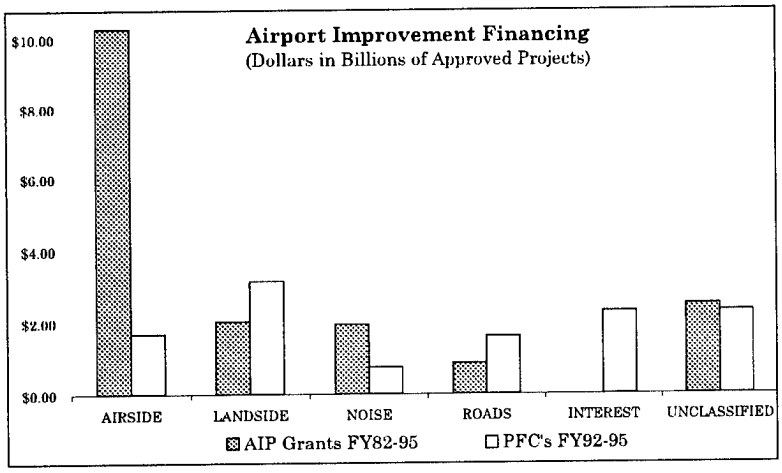




AIRPORT IMPROVEMENTS

The National Plan of Integrated Airport Systems identifies approximately $40 billion in airport development projects eligible for Federal aid over the next 10 years. FAA plays a critical role in revitalizing and expanding the Nation's airport infrastructure. By authority of the Airport and Airway Improvement Act of 1982, as amended, the FAA issues grants to improve airport safety, capacity, and service and to reduce the adverse impact on the environment. In addition to direct grant authority for airport improvements, FAA has approval and oversight authority of passenger facility charges, authorized by the Aviation Safety and Capacity Expansion Act of 1990.

The chart on the next page "Airport Improvement Financing" displays the allocation of the projects approved under both of these programs. Airside projects include improvements to runways, taxiways, aprons, and equipment. Landside projects include improvements to the terminal building and security. The noise projects include the purchase of land and other soundproofing efforts. Airport Improvement Program grants are not



used to pay interest incurred by the airport authority; however, of this is an authorized use from the funds collected as passenger facility charges. The unclassified is included for AIP funds which spans multiple categories such as state block grants, planning, and land other than noise.

MANAGEMENT REPORT OF THE CHIEF FINANCIAL OFFICER

The Federal Aviation Administration's (FAA) financial community experienced significant change during FY 1995. The agency's two financial organizations, the Offices of Accounting and Budget, formerly under the direction of the Assistant Administrator for Budget and Accounting, were consolidated into the Office of Financial Services under the direction of the Chief Financial Officer. This organizational change integrated financial management and automation functions to utilize financial resources more effectively and to reduce supervisory, management, and organizational entities.

FAA's financial community continues to make notable strides toward a paperless environment. Several initiatives currently underway will not only enable our organization to become more efficient and effective, but also will empower our customers with the management and control of their data. A credit card system has been implemented to enable small purchase transactions to be entered into a personal computer, electronically approved by a designated official, and automatically transmitted to the Departmental Accounting and Financial Information System. A similar system has been implemented to enable FAA to electronically receive and pay FEDEX invoices and a prototype is currently under development for the electronic receipt of utility company invoices.

The Financial Information Management System, a program application that allows users to review and analyze FAA monthly financial data using customized EXCEL workbooks or standard templates, was upgraded during FY 1995 to provide faster retrieval time. The new version also provides faster and more comprehensive setup and update programs and increases the amount of data that can be accessed and displayed. Deployment of the new version throughout FAA will be completed by September 1996. Phase II of the Cost Activity Measurement System (CAMS) was completed during FY 1995. During this phase, prototype activity-based cost (ABC) models were developed to provide managers with the cost of performing work within their organizations and to associate the work performed with services produced to refine the process of computing unit service cost. Additionally, Phase II identified targets of opportunity to enhance efficiency and effectiveness. Phase III, which will run through January 1997, involves developing and implementing a CAMS automated platform and migrating the ABC models developed during Phase II to other FAA organizations. Phase III results will provide managers with automated access to activity and unit cost data for their organizations. We anticipate that CAMS will be implemented FAA-wide by January 1998.

Our future challenges include providing more services with fewer financial and human resources. A balanced budget agreement could translate into a significant reduction in FAA spending by FY 2002. Additionally, the December 31, 1995, expiration of the aviation excise taxes will significantly reduce income into the Airport and Airway Trust Fund. Assuming normal airline ticket purchases, the trust fund will lose approximately $16 million per day in total ticket receipts. Unless the authority for collection of the aviation excise taxes is renewed or the agency receives authority for financial reform, trust fund resources will be depleted and the FAA will have to rely on the general fund to finance all of its spending.

Questions regarding this annual report may be directed to the Financial Statements, Analysis, and Control Branch, ABA-310, 800 Independence Avenue, S.W., Washington, DC 20591.

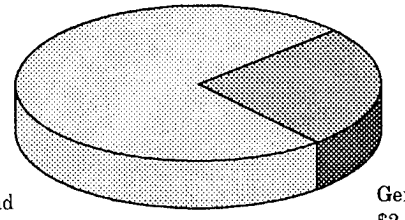
Ruth A. Leverenz

Ruth A. Leverenz
Chief Financial Officer

FY 1995 FINANCIAL HIGHLIGHTS

The FAA is financed through annual, multi-year, and no-year appropriations authorized by Congress. The Airport and Airway Trust Fund provides for 75 percent of the congressional appropriations. The remaining 25 percent is derived from the General Fund of the U.S. Treasury. In FY 1995, almost $6.2 billion of the FAA's total budget of $8.3 billion came from the Airport and Airway Trust Fund.

FY 1995
FAA FUNDING BY SOURCE
(Dollars in Millions)



AIRPORT AND AIRWAY TRUST FUND

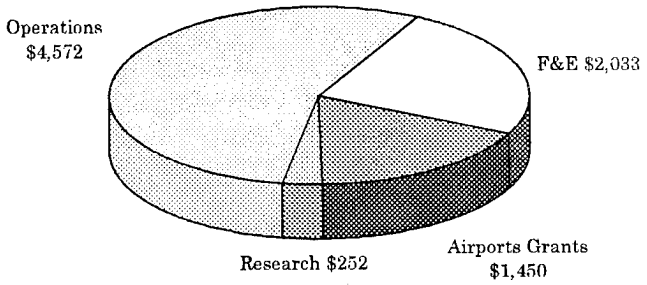
The Airport and Airway Revenue Act of 1970 (Act) created the Airport and Airway Trust Fund (Trust Fund) to provide a stable source of funding to finance investments in the airport and airway system and, to the extent funds were available, cover the operating costs of the airway system as well. The Act provided for the deposit of aviation taxes now in the Trust Fund. These taxes consist of a 10 percent ad valorem passenger ticket tax, a 6.25 percent ad valorem freight waybill tax, a $6 per enplanement tax on international departures, and a general aviation fuel tax of $0.15 per gallon of gasoline and $0.175 per gallon of jet fuel.

The FAA's three capital programs—Facilities and Equipment (F&E); Research, Engineering and Development (R,E,&D); and the Airport Improvement Program (AIP)—receive 100 percent of their funding from the Trust Fund. These critical capital investment programs are described in three regularly issued plans: the Aviation System Capital Investment Plan; the FAA Plan for Research, Engineering and Development; and the National Plan of Integrated Airport Systems. In addition to funding the capital programs, the Trust Fund pays a portion of the FAA's operating cost. Since 1991, the Operations appropriation has received approximately 50 percent of its funding from the Trust Fund and the balance from the General Fund.

While held by Treasury, Trust Fund monies are invested in Government securities. Any interest earned is deposited into the Trust Fund. Cash is withdrawn from the Trust Fund as it is needed and transferred into each FAA appropriation to cover necessary outlays.

The Trust Fund also finances appropriations for the rental of FAA's Washington, D.C., headquarters and field space and related services administered by the General Services Administration and for the Essential Air Service Program administered by the Office of the Secretary of Transportation. In FY 1995, the Trust Fund contributed $40.8 million and $28.5 million, respectively, to these programs.

FY 1995 FAA BUDGET
Distribution by Appropriation
(Dollars in Millions)



FACILITIES AND EQUIPMENT (F&E) APPROPRIATION

Funds from the F&E appropriation are used to modernize, expand, and replenish the air traffic control (ATC) infrastructure. Examples of F&E programs underway include the replacement of aging ATC computer hardware and software; a replacement of 1960's vintage Bell mechanical switches with a new voice switching and control system; the installation of advanced radar for airport surveillance, to help prevent runway incursions, and to warn of hazardous weather; the augmentation of global positioning system (GPS); and the further expansion of data link services. The Aviation System Capital Investment Plan (CIP) is the agency's primary mechanism for documenting current and future F&E requirements. The FY 1995 edition of the

CIP describes some 100 near-, mid-, and long-term capital investment projects that will require funding from the Airport and Airway Trust Fund.

Each year, the FAA attempts to balance the content of the CIP to ensure that it is consistent with modern technology, acquisition policy, and funding constraints. The 1995 edition, for example, shows significant thrusts toward the civil application of satellite technology into ATC operations. The F&E appropriation also finances other capital investments such as the purchase of aircraft for facility flight

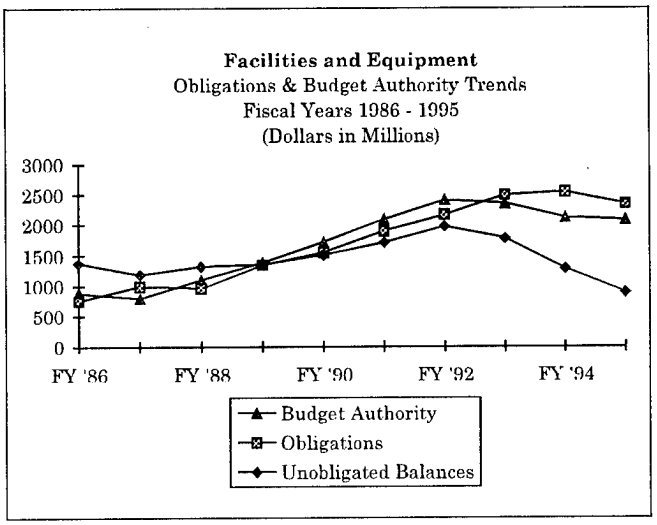
Capital Investment Plan Cornerstone Projects

Voice Switching and Control System (VSCS)	• Improves voice communications reliability. • Improves the voice communications system's computer/human interface. • Improves communication flexibility.
En Route Automation Program; and Standard Terminal Automation Replacement System (STARS)	• Replaces aging and unsupportable equipment. • Accommodates continued system growth.
Aeronautical Data-Link	• Reduces communication errors. • Facilitates cockpit/ATC automation integration. • Facilitates a seamless domestic and international data communications service.
Weather Radar Program	• Enhances en route aviation weather products. • Facilitates safety and fuel savings.
Terminal Doppler Weather Radar (TDWR)	• Provides dangerous microburst and windshear hazard warnings.
Oceanic Automation Program (OAP)	• Improves communications and position reporting over the ocean.
Terminal ATC Automation (TATCA)	• Provides traffic management advisory tools in the terminal airspace. • Facilitates full use of terminal airspace capacity. • Increases safety and efficiency.
Airport Surface Traffic Automation (ASTA)	• Optimizes sequencing and scheduling. • Maximizes the use of surface capacity. • Increases controller effectiveness.
Integrated Terminal Weather System (ITWS)	• Integrates terminal area weather data. • Increases safety in the terminal area.
Augmentations for Global Positioning System (GPS)	• Benefits aviation users. • Envisioned as the navigation system of the future with global application. • Potential for a complete radio navigation service for all phases of flight.
Airport Surveillance Radar (ASR)	• Reduces the risk of midair collisions within the terminal area.
Airport Surface Detection Equipment (ASDE)	• Aids in the direction and movement of surface traffic, especially in periods of low visibility.
Automatic Dependent Surveillance (ASD)	• Provides satellite-based aircraft position reports; more frequent and reliable communications between controllers and pilots.

inspection and training and experimental facilities for engineering and development programs.

During FY 1995, the agency obligated 72 percent of the FY 1995 appropriation. This is the highest obligation rate ever recorded during the first year of availability. The personnel and related expenses portion achieved an 89 percent first year obligation rate while the project portion achieved a 70 percent rate. For the third consecutive year, obligations exceeded the current year budget authority, thus significantly reducing the unobligated balance brought forward from prior years.

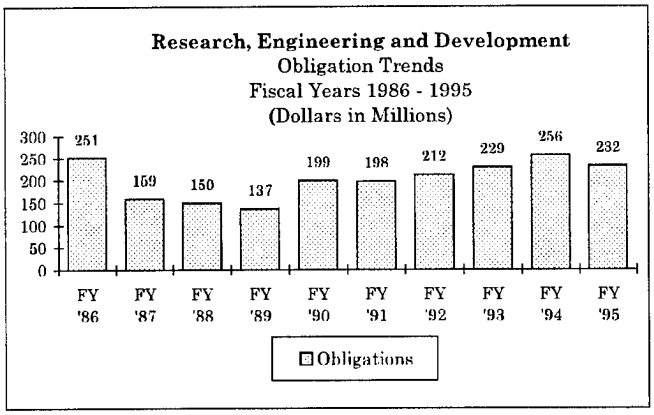
In FY 1995, there were two rescissions and one budget adjustment resulting in a reduction of $127.1 million of current and prior year F&E budget authority. These reductions were primarily for deficit reduction.



RESEARCH, ENGINEERING AND DEVELOPMENT (R,E&D)

The FAA's R,E&D programs are directed toward improving safety, security, capacity, and efficiency in the National Airspace System (NAS). Projects such as advanced traffic management system and the early introduction of satellite navigation capabilities will improve competitiveness of the U.S. aviation industry efficiency as well as the efficiency and cost effectiveness of the FAA.

Other key areas of concentration include human factors and aviation medicine research to improve efficiency and reduce the risk of human error by agency personnel and air



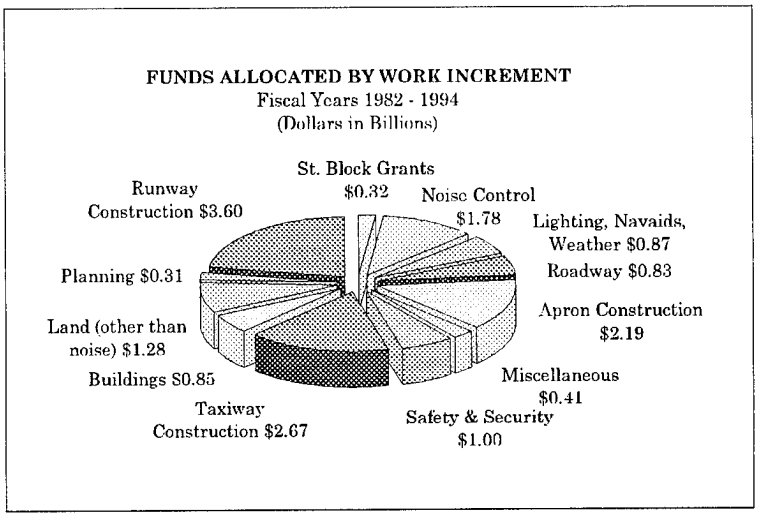
crewmembers; development and testing of aircraft safety and fire protection methods; aviation weather research to develop advance forecasting and weather dissemination products; and studies to improve the environment through quieter engines and reduced aircraft emissions. FAA is also the leading Federal Government agency for the development of security and explosives detection systems.

The FAA publishes an annual R,E&D Plan which describes initiatives for NAS service improvements and development of the next generation air traffic management system.

During FY 1995, there was one rescission resulting in a reduction of $7.6 million of budget authority. This reduction was for deficit reduction.

AIRPORT IMPROVEMENT PROGRAM (GRANTS-IN-AID FOR AIRPORTS)

The payment of user taxes to the Federal Government by air travelers and shippers contributes to the Airport and Airway Trust Fund and makes it possible



to fund one-fourth to one-third of all capital development at the Nation's public use airports. Consequently, no Federal monies are withdrawn from the General Fund for federally assisted projects to maintain and enhance airport safety, preserve existing airport infrastructure, and expand capacity and efficiency throughout the airport system.

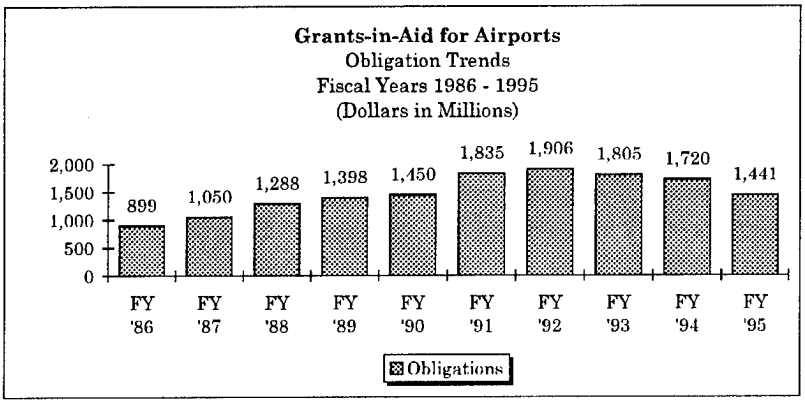
The National Plan of Integrated Airport Systems (NPIAS) draws selectively from local, regional, and state planning studies to estimate the costs associated with establishing a system of airports adequate to meet the needs of civil aviation. Costs identified in the NPIAS are nominally eligible for Federal grants-in-aid. Over the next 5 years, the cost of development needed to keep pace with growing aviation demands is estimated to be approximately $30 billion.

Under the AIP in FY 1995, the FAA reviewed and approved 1,047 projects. This resulted in the obligation of $1.45 billion for new grants and increases to prior grants for airport planning and development. Of this amount, $295.5 million was invested in capacity enhancement, $163.2 million was directed to noise compatibility planning and implementation projects, and $38.6 million was granted to assist in the civil aviation development of joint-use and former military airfields.

In addition to Federal grants under the AIP, commercial service airports have at their disposal a powerful financing tool in the passenger facility charge (PFC). First authorized in FY 1990, a public agency may impose a fee of $1, $2, or $3 on each enplaned passenger at any commercial service airport it owns or operates. Collections, which first began on June 1, 1992, now produce revenue for airports at a rate approaching $800 million per year.

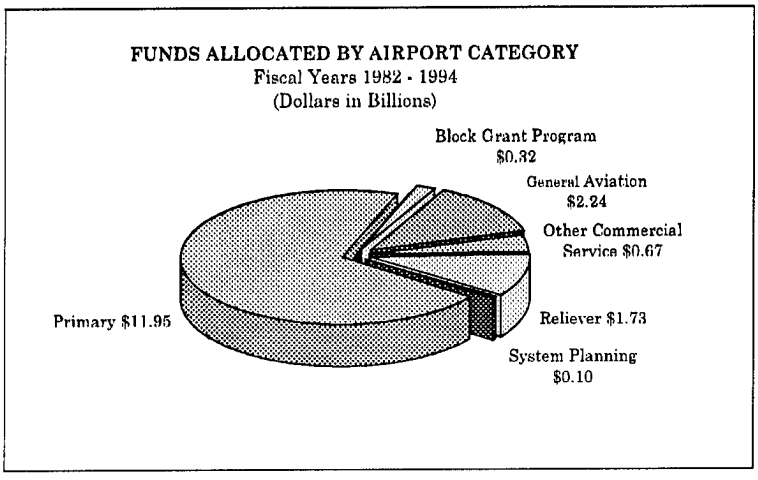
Although these revenues are not considered Federal funds, the public agency's application to impose a PFC must be approved by the FAA. During FY 1995, the FAA's airport planners processed over 90 PFC applications, approving over $1.4 billion in PFC collections to fund almost 750 projects.

Projects funded with PFC revenue are, in most respects, similar to those funded with AIP grants. Use of the funds, however, is not limited by Federal priorities nor by limitations on AIP availability. Notable projects which have been made possible with PFC revenue include a major terminal expansion at Washington Dulles International Airport and a new runway at Dallas/Fort Worth International Airport, the latter an example of joint AIP-PFC funding.



OPERATIONS APPROPRIATION

Funds from the Operations appropriation are used to pay salaries and other costs required to operate and maintain the air traffic control system on a 24-hour basis. Other mission-critical expenses financed by this appropriation include salaries and associated costs for: (1) the planning, direction, and evaluation of FAA programs; (2) engineering for the establishment of air navigation facilities; (3) the development and enforcement of flight standards and civil air regulations; (4) the promulgation and enforcement of standards, rules, and regulations governing the physical fitness of airmen and the direction and administration of aviation research and development programs; (5) the administration of research and development programs; and (6) national

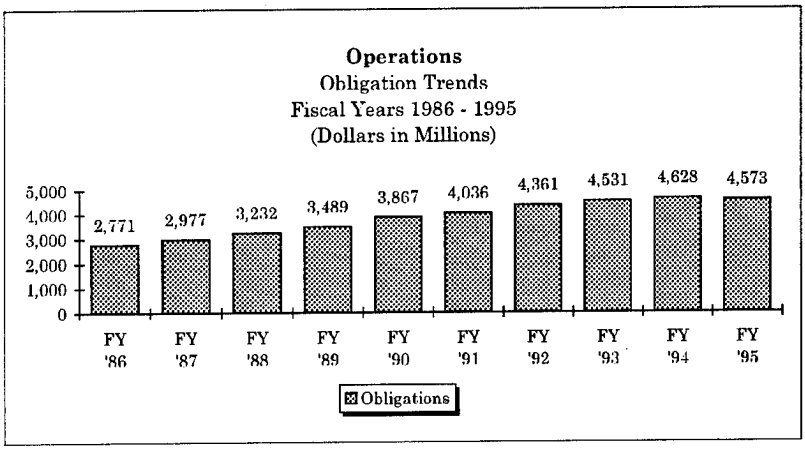


Grants-in-Aid for Airports Outlays by State / Territory

(Dollars in Thousands)

Fiscal Year Ending September 30

STATE / TERRITORY	1994	1995
Alabama	18,904	15,688
Alaska	84,890	55,479
Arizona	28,451	37,579
Arkansas	6,310	21,190
California	135,880	124,302
Colorado	63,114	63,982
Connecticut	11,208	5,204
Delaware	286	2,109
District Of Columbia	151	40
Florida	104,486	106,405
Georgia	36,860	52,274
Hawaii	25,869	21,371
Idaho	8,862	10,033
Illinois	85,295	110,421
Indiana	16,786	51,509
Iowa	18,947	16,202
Kansas	14,885	14,293
Kentucky	26,957	65,337
Louisiana	24,132	28,854
Maine	8,481	10,063
Maryland	13,081	16,823
Massachusetts	16,914	31,000
Michigan	39,805	47,010
Minnesota	31,638	23,251
Mississippi	5,405	10,867
Missouri	38,715	43,432
Montana	11,185	11,683
Nebraska	12,525	11,722
Nevada	30,131	28,742
New Hampshire	13,724	13,896
New Jersey	21,318	20,638
New Mexico	13,545	13,002
New York	84,037	96,655
North Carolina	47,304	42,231
North Dakota	9,311	8,172
Ohio	36,252	47,660
Oklahoma	17,300	21,317
Oregon	16,102	10,349
Pennsylvania	51,653	61,482
Rhode Island	13,821	21,314
South Carolina	19,917	25,156
South Dakota	3,868	10,958
Tennessee	38,152	37,271
Texas	128,573	137,226
Utah	22,406	52,017
Vermont	3,380	2,826
Virginia	64,993	52,376
Washington	37,963	44,412
West Virginia	7,701	5,622
Wisconsin	20,176	20,840
Wyoming	7,947	11,521
American Samoa	1,685	530
Guam	4,232	12,005
Northern Mariana Island	4,356	7,528
Puerto Rico	6,381	7,365
Trust Territory Of Pacific	95	211
Virgin Islands	3,2704	4,206
Total	$1,619,615	$ 1,825,651



integrated airport planning and the supervision of grants in aid for airport construction.

OTHER FINANCIAL PROGRAMS

Aviation Insurance Revolving Fund

This self-sustaining program, authorized under Chapter 443 of Title 49, U.S. Code, provides insurance coverage under conditions where commercial insurance is unavailable. Administrative costs for the operation of this program are recovered by FAA from fees and premiums charged to the carriers and interest earned through authorized investments.

Aircraft Purchase Loan Guarantee Program

Under statutory authority no longer in effect, the U.S. Government guaranteed private loans to certain air carriers for the purchase of aircraft and equipment.. This program peaked in 1982 with 68 loans totaling over $659 million guaranteed by the Government. Authorization for guaranteeing new loans has expired, and the current function of the program is to make payments to lenders in the event of defaults by air carriers. As of September 30, 1995, $3.1 million remains outstanding in loans guarantees under this program.

Reimbursable Programs

The FAA receives reimbursable obligation authority to perform work for others in three appropriations: F&E, R,E&D, and Operations. Actual reimbursements in FY 1995 were $80.0 million for F&E, $1.5 million for R,E&D, and $52.6 million for Operations. The majority of FAA's reimbursable agreements are with other Federal Government agencies. The agency also enters into agreements with the International Civil Aviation Organization (ICAO) and with foreign governments. Examples of reimbursable work for other Federal agencies are joint-use radar sites with the U.S. Air Force (USAF) and purchases where it is more economical to make a single buy of similar equipment used by both the FAA and USAF.

ICAO agreements typically involve the training of foreign nationals at the FAA Academy. Direct reimbursable agreements with foreign governments generally are for technical assistance, training, supply support, or the operation of civil aviation assistance groups in foreign countries.

ACCOUNTABILITY REPORTS

The United States Government Chief Financial Officers Council recommended, in a report dated January 17, 1995, the simplifying and streamlining of Governmentwide statutory reporting requirements under five public laws into two annual reports. The recommendations would consolidate and condense reporting requirements for the Federal Managers' Financial Integrity Act, the semiannual management audit follow up report required by the Inspector General Act of 1978, the Chief Financial Officers Act, the Prompt Payment Act, the Government Performance and Results Act, and the Federal Civil Penalties Inflation Adjustment Act of 1990 into two annual reports—an Accountability Report and a Planning and Budget Report. FAA fully supports this recommendation and plans to eventually merge the new Accountability Report with this annual report.

Prompt Payment Act Report

	FY 1995	FY 1994
Invoices Paid Subject to the Prompt Payment Act and OMB Circular A-125:		
Dollar Amount:	$2,175,477,376	$1,875,266,524
Number:	378,529	391,462
Invoices Paid Late:		
Dollar Value of Invoices:	$614,900,391	$233,910,601
Number :	25,826	32,965
Late Payment Interest Penalties Paid:		
1. Dollar Amount	$692,187	$483,926
2. Number	12,428	12,244
3. Relative Frequency	3.28%	3.13%

For FY 1995, we have included summaries of two of the reports recommended to be included in the Accountability Report .

Prompt Payment Act Report

The Prompt Payment Act Amendments of 1988 set forth the requirement for interest on late payments by the Federal Government. The interest expense associated with late payments is charged to the same appropriation as the original invoice, i.e., Operations; R,E&D; or F&E. A comparison of late payment interest paid by FAA for FY 1994 and FY 1995 follows:

Civil Monetary Penalty Report

	FY 1995		FY 1994	
	Number	Amount	Number	Amount
Penalties:				
Assessed	1,670	$4,005,692	959	$3,618,609
Collected	1,461	$3,385,474	916	$2,388,922

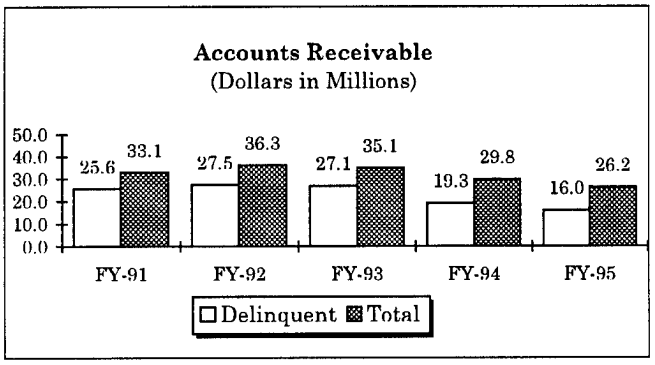
Civil Monetary Penalty Report

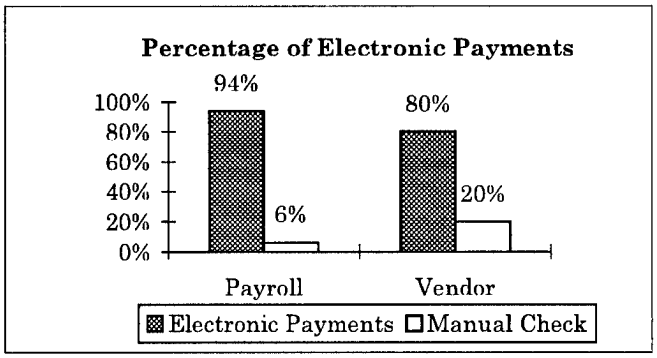
The Federal Civil Penalties Inflation Adjustment Act of 1990 established annual reporting requirements for civil penalties assessed and collected by Federal agencies. These include non criminal penalties for violations of the Federal Aviation Regulations or violations of hazardous materials regulations. A comparison of civil penalties assessed and collected by FAA for FY 1994 and FY 1995 follows:

FINANCIAL PERFORMANCE MEASURES

Debt Management

In FY 1995, FAA billed $35.1 million in new accounts receivable due from the public. During the same period, FAA collected $28.3 million in accounts receivable. FAA ended FY 1995 with $26.2 million in outstanding accounts receivable, of which $16 million was delinquent. The majority of the delinquent debt is interest due from airlines which have defaulted on aircraft purchase loan guarantees and amounts due from foreign governments for reimbursable agreements.





The chart above shows the end-of-year status of FAA's accounts receivable due from the public for the years FY 1990 through FY 1995.

Electronic Payments

The FAA currently uses two methods for electronic payments, automated clearing house (ACH) and FEDLINE, referred to as electronic funds transfer (EFT). ACH payments are made electronically from the Departmental Accounting and Financial Information System through the ACH network for deposit directly into the designated bank account on the payment date. EFT payments are also deposited directly into the designated bank account. EFT is used by FAA for employees' salaries and to make payments of $25,000 or more to vendors. In FY 1995, 80 percent of FAA travelers received their reimbursement payment via ACH, 94 percent of FAA's more than 48,000 employees received their pay via ACH, and 80 percent of the $2 billion paid to vendors flowed through EFT and ACH. The next step to increase the use of electronic payments will be to implement an employee "one-stop shopping" process for travel and other employee-related payments. Under this process, the personnel office staff will inform new employees that all employment-related payments will be made electronically unless specific action is taken to make other arrangements.

ANALYSIS OF SELECTED FAA PAYROLL COSTS
(Dollars in Thousands)

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Total FAA Payroll Costs	$3,001,383	$3,285,300	$3,525,121	$3,787,530	$ 3,562,664
Average Cost per FTE	$ 56.7	$ 61.4	$ 66.2	$ 73.9	$ 73.4
FAA Contribution to:					
FERS Retirement	$ 145,566	$ 153,878	$ 178,393	$ 197,643	$ 182,774
1% Thrift Savings Program	6,818	7,683	9,111	10,084	10,770
FAA Matching, Thrift Savings	20,895	23,545	30,488	35,197	38,173
Social Security - FICA	49,722	56,366	72,421	73,622	77,648
Total FAA Contribution to FERS	$ 223,001	$ 241,472	$ 290,413	$ 316,546	$ 309,365
Number of Employees Enrolled in FERS	19,498	22,003	22,561	22,317	22,463
% FERS Costs to Total Payroll	7.4%	7.4%	8.2%	8.4%	8.7%

% Growth in FERS Retirements costs FY 1991- to FY 1995: 38.2%

Note: Effective 10/2/94, the agency contribution to FERS dropped 3% for air traffic controllers and law enforcement officers and 1/2% for all other FERS employees

FAA Contribution to:					
Civil Service Retirement	$ 112,942	$ 114,937	$ 118,224	$ 111,936	$ 109,961
Medicare	39,609	39,600	44,430	43,507	44,406
Total FAA Contribution to CSR	$ 152,551	$ 154,537	$ 162,654	$ 155,443	$ 154,367
Number of Employees Enrolled in CSR	32,502	31,374	30,765	28,503	26,427
% CSR Costs to Total Payroll	5.1%	4.7%	4.6%	4.1%	4.3%

% Growth in CSRS Retirement in FY 1991 to FY 1995: 11.9%

FAA Contribution to:					
Health Insurance Programs	$ 116,171	$ 133,493	$ 140,302	$ 139,685	$ 128,697
Number of Employees Enrolled	46,444	47,825	47,715	45,800	43,934
Annual Costs per Employee	$ 2.5	$ 2.8	$ 2.9	$ 3.1	$ 3.0

% Growth in Health Insurance Costs FY 1991 to FY 1995: 10.8%

Source: Consolidated Uniform Payroll System

STATEMENT OF OBLIGATIONS INCURRED BY APPROPRIATION AND MAJOR OBJECT CLASSIFICATION

(Values Rounded to the Nearest Thousand)
Fiscal Year 1995

	Operations	Facilities and Equipment	R,E&D	Grants	Totals
Personnel Compensation	$2,776,235	$127,041	$37,244		$2,940,520
Civilian Personnel Benefits	714,996	36,605	6,879		758,480
Benefits for Former Personnel	12,994	486	276		13,756
Travel and Transportation of Persons	88,594	31,163	4,773		124,530
Transportation of Things	25,147	4,602	254		30,003
Rent, Communications, and Utilities	401,679	51,574	804		454,057
Printing and Reproduction Service	10,273	512	64		10,849
Other Services	459,782	1,341,866	162,151		1,963,799
Supplies and Material	91,471	47,227	5,166		143,864
Equipment	49,829	545,239	8,654		603,722
Land and Structures	357	227,723			228,080
Investments and Loans					0
Grants, Subsidies, and Contributions		(1,500)	41,537	$1,557,598	1,597,635
Insurance Claims and Indemnities	1,150	72			1,222
Refunds		8			
Total	**$4,632,507**	**$2,412,610**	**$267,802**	**$1,557,598**	**$8,870,517**

(Percentage Rounded to the Nearest Tenth)
Fiscal Year 1995

	Operations	Facilities and Equipment	R,E&D	Grants	Totals
Personnel Compensation	59.9%	5.3%	13.9%		33.1%
Civilian Personnel Benefits	15.4%	1.5%	2.6%		8.6%
Benefits for Former Personnel	0.3%	0.0%	0.1%		0.2%
Travel and Transportation of Persons	1.9%	1.3%	1.8%		1.4%
Transportation of Things	0.5%	0.2%	0.1%		0.3%
Rent, Communications, and Utilities	8.7%	2.1%	0.3%		5.1%
Printing and Reproduction Service	0.2%				0.1%
Other Services	9.9%	55.6%	60.5%		22.1%
Supplies and Material	2.0%	2.0%	1.9%		1.6%
Equipment	1.1%	22.6%	3.2%		6.8%
Land and Structures		9.4%			2.6%
Investments and Loans					0.0%
Grants, Subsidies, and Contributions			15.5%	100.0%	18.0%
Insurance Claims and Indemnities		-0.1%			0.0%
Refunds		0.0%			
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

FEDERAL MANAGERS' FINANCIAL INTEGRITY ACT (FMFIA)

In FY 1995, the FAA submitted an annual FMFIA report to the Office of the Secretary of Transportation that the agency was in conformance with the requirements of the FMFIA. One pending material weakness within the advanced automation system program was reported. This material weakness was originally identified in FY 1994 and was considered by Office of Management and Budget (OMB) to be a high risk area. However it is now considered by OST to be substantially compliant. Based on the actions taken, commitments made, and absence of any specific high risk, the Department no longer believes that this is a high risk area.

In accordance with a more flexible departmental FMFIA policy, plans for evaluating internal controls are now the responsibility of each FAA line of business and staff organization which is responsible for developing and monitoring its own internal plans for identifying assessable units and evaluating the risk of waste, fraud, and abuse.

EXTERNAL OVERSIGHT

The FAA's programs are subject to audit by the General Accounting Office (GAO) and the Department of Transportation Office of Inspector General (OIG). The GAO conducts special audits at the request of Congress; however, the GAO may also initiate additional audits at its discretion. Reports of GAO audits and evaluations are issued at the national level. The OIG conducts internal, grant, and contract audits, and reports are issued at the regional, center, and Washington headquarters levels. The OIG also exercises oversight authority by conducting investigations of individuals or companies suspected of violating the law and complaints made to the OIG Hotline.

Audits of FAA Airport Improvement Program grants are conducted under the requirements of the Single Audit Act of 1984. This Act states that any state or local government grantee receiving $100,000 or more a year in Federal funds must be audited annually by an independent auditor. The OIG provides technical advice to grantees and their auditors and ensures that the audits are accomplished according to established performance and reporting standards. Oversight is exercised through desk and quality control reviews of the independent audit work performed.

OIG contract auditing is an advisory service to contracting officers concerning the propriety of a contractor's cost. Most of this work is accomplished through a reimbursable agreement with the Defense Contract Audit Agency.

Significant GAO Audits in FY 1995

New Denver International Airport (DIA). GAO released four products on Denver's new airport. A briefing report, ***"New Denver Airport:*** Impact of the Delayed Baggage System," addresses: (1) problems with the baggage handling system that delayed the airport's opening; (2) the added costs resulting from the delay; and (3) the adequacy of expected revenues at the new airport to cover the cost of operating the facility and to service its debt. Testimony entitled ***"Denver International Airport"*** was provided to the House Subcommittee on Aviation, Committee on Transportation and Infrastructure, which focuses on DIA's: (1) development, including that of the automated baggage system; (2) cost; and (3) airfield construction. A fact sheet, ***"Denver International Airport: Baggage Handling, Contracting, and Other Issues,"*** was issued providing information on: (1) a chronology of major events that occurred in building DIA's automated baggage-handling system; (2) an assessment of the contract award process, including any special considerations for disadvantaged businesses; and (3) a list of major concerns expressed about the project and their resolutions. A report, ***"Denver International Airport: Information on Selected Financial Issues,"*** reviewed: (1) DIA construction cost growth; (2) differences between DIA's financial consultant's report and audited financial statements relating to Denver Airport System's bond debt; and (3) Securities and Exchange Commission jurisdiction over municipal bonds and the status and scope of its DIA investigation. GAO plans to issue another report, at a later date, on cash flows and operating results from DIA operations.

Government Corporation. GAO provided testimony twice on the proposal to create a government corporation. The first, ***"Air Traffic Control: Issues Presented by Proposal to Create A Government Corporation,"*** was given to the Subcommittee on Aviation of the House Committee on Transportation and Infrastructure and the other, ***"Air Traffic Control: Analysis of Proposal to Create a Government Corporation,"*** was given to

the Subcommittee on Aviation of the House Committee on Transportation. Each of the testimonies are almost the same and center on GAO's views on proposals to reform the FAA air traffic control system.

GAO issued two reports on the GPS. The first, ***"Global Positioning Technology: Opportunities for Greater Federal Agency Joint Development and Use,"*** focuses on the extent to which agencies have been developing joint systems or sharing equipment and the additional steps that may be needed to enhance joint development or sharing of GPS equipment, facilities, and information. The second report, ***"National Airspace System: Comprehensive FAA Plan for Global Positioning System is Needed,"*** assesses whether FAA will have sufficient time, under new milestones, to augment GPS and whether FAA has taken the appropriate actions to better manage its GPS-related efforts.

"Air Traffic Control: Status of FAA's Plans to Close and Contract Out Low-Activity Towers" states that the FAA's plan to close or contract out all of its level 1 towers appears reasonable, but there are several factors which may affect the FAA's efforts to do this quickly.

"Aviation Safety: Data Problems Threaten FAA Strides on Safety Analysis System" states that the FAA's management of the Safety Performance Analysis System (SPAS) acquisition appears generally sound, but the lack of strategy for improving SPAS source data threatens the system's utility.

"Aviation Security: FAA Can Help Ensure That Airports' Access Control Systems Are Cost-Effective" summarizes the FAA's efforts to assist airports in modernizing access control systems and identifies several areas where the process could be improved.

To obtain copies of these reports, call 202-512-6000. The first copy of any GAO report is free. Additional copies are $2 each.

OIG Audit of FAA's FY 1994 Financial Statement

The audit was limited to FAA's Statement of Financial Position. As previously identified and reported in prior fiscal year financial statement audits, FAA had not reconciled several material accounts to subsidiary records, and detail records supporting these material accounts were generally not available for the OIG to substantiate corresponding amounts reported on the combining statement of financial position. Further, FAA had not properly capitalized the costs of acquiring major assets. The continuing existence of these reconciliation, documentation, and capitalization issues impaired the scope of the OIG's audit work to the extent that an opinion could not be expressed on the statement of financial position.

Internal control tests identified a new material weakness related to inventory reported for FAA headquarters. This further contributed to the auditors inability to express an audit opinion. The OIG report states that identification of significant reportable conditions precluding issuance of an audit opinion has not been uncommon at other Federal agencies during the first several years of preparing and issuing audited financial statements.

Additionally, 12 new nonmaterial reportable conditions associated with the agency's internal control structure were identified. These nonmaterial reportable conditions involved: (1) Federal Employees' Compensation Act benefits; (2) inventory gains and losses; (3) disclosure of multiyear grants; (4) fund balance reconciliations; (5) performance measures; (6) accrued unfunded leave; (7) employee performance awards; (8) Sunday premium pay; (9) yearend payroll accruals; (10) accuracy and completeness of notes to the financial statement; (11) obligations for airport grants; and (12) microcomputer accountability. More than one-half of the new reportable internal control deficiencies were related to portions of the financial statement that were audited for the first time. This was the first year the entire financial statement was audited in accordance with the CFO Act. Although the OIG had previously audited FAA's financial statements for FY's 1992 and 1993, those audits covered only the Airport and Airway Trust Fund account balances.

During the audit, FAA initiated action to correct the one new material weakness and all the reportable conditions, while continuing action to resolve internal control problems identified by the FY 1993 financial statement audit.

Other Significant OIG Audits in FY 1995

"Passenger Facility Charges (PFC)" states FAA has established the necessary management controls to provide accountability for PFC funds and to ensure Federal AIP grant funds are reduced appropriately for airports imposing PFC's. The auditors made two

recommendations designed to improve controls over air carrier financial reporting of PFC funds and air carrier accumulation of PFC overcharges. FAA adopted both recommendations. In addition, FAA issued a directive strengthening the management controls for monitoring the proper treatment of PFC revenues collected by air carriers.

"Monitoring of Airport Revenues at Seattle-Tacoma International Airport, Northwest Mountain Region" states that monitoring was not adequate. The region relied on the Port of Seattle (the airport sponsor) self-certifications, annual single audits, and third-party complaints to ensure compliance with the Airport and Airway Improvement Act of 1982 (AAIA), 49 USC 47107(b).

The report further states that the sponsor diverted airport-generated revenues by: (1) expending $2.9 million to help construct a community activity center and (2) obligating another $3 million to develop a public park on airport land leased to the city of Seattle-Takoma. FAA only partially concurred with the OIG's recommendation requiring the sponsor to reimburse the Airport and Airway Trust Fund $2.9 million for funds expended on the community activity center and to ensure the additional $3 million is not expended on park development.

"Surveillance of Pilot Schools" states that the pilot schools complied with FAA certification, curriculum, and operating requirements. In addition, adequate surveillance oversight was provided by trained FAA inspectors. However, surveillance accomplishments were not reported consistently and accurately in the program tracking and reporting subsystem (PTRS). This occurred because reporting procedures were not interpreted and applied consistently by FAA inspectors, and management oversight did not identify reporting inconsistencies. To the extent PTRS data are incorrect, FAA's ability to manage its pilot school surveillance program is compromised. In order to satisfy the OIG's recommendations, FAA revised its PTRS Procedures Manual instructing Flight Standards District Offices to establish local procedures for reviewing PTRS data for accuracy and currency. The OIG found the FAA actions to be responsive to its findings and recommendations.

"Management Controls Over Employee Relocations" states that FAA did not have adequate controls to ensure all permanent change of station (PCS) moves were in the best interest of the Government nor did FAA fully implement its plan to reduce PCS costs. Specifically, FAA did not restrict short-distance moves at Denver and Chicago. In fact, some employees were paid PCS benefits even though they did not meet Federal Travel Regulation (FTR) distance requirements, and others were paid PCS benefits while actually increasing their commutes. This occurred because FAA entered into a union agreement which did not implement FAA's 35-mile distance requirement for PCS moves for these two cities, and Regional Administrators extended the agreement to nonbargaining unit employees and did not enforce requirements. FAA also exceeded FTR requirements by providing return rights to staff based on assignments within the United States.

The OIG stated FAA could save $18.4 million in PCS funds at Denver and Chicago by adhering to its overall policy of requiring employees to move at least 35 miles. Of the $18.4 million, FAA has already obligated $1.3 million. In addition, FAA has expended or obligated $525,855 to move employees who were not entitled to PCS benefits, and this amount should be recovered. Also, FAA may have to pay as much as $57 million to honor return rights for PCS moves for staff accepting assignments within the United States.

FAA concurred with the OIG's results on short-distance moves and indicated agreement to the monetary amounts cited in the report. FAA stated that of the 31 moves reviewed, 29 were not eligible and appropriate collection in the amount of $471,485 will be taken. FAA agreed to revise its orders to eliminate return rights for PCS moves within the continental United States except in rare instances where all other avenues and incentives have been exhausted, and the employee possesses a unique knowledge or skill needed in the position. FAA further stated that it plans to only honor return rights in cases where the employee was clearly eligible for return rights and the employment agreement was not executed or located due to an administrative error by the FAA. The OIG stated the actions taken and planned by the FAA were reasonable and considered the recommendations resolved.

"Management Advisory Memorandum on Aircraft Fleet Modernization" states that FAA initiated various measures to evaluate the systems and operational mission requirements of aircraft acquisition for the Flight Inspection Program. From September 1990 to May 1994, FAA reduced the

number of aircraft needed to accomplish its operational requirements from 16 to 9. FAA made this reduction by increasing the intervals for flight inspection on certain types of navigational aids and realigning the organization used to inspect overseas facilities. These program changes, however, necessitate a revalidation of the quantities and types of aircraft before future options are exercised. The flight inspection aircraft appeared to be acquired economically as FAA complied with the Federal Acquisition Regulation and Department of Transportation contracting procedures. FAA established plans to provide personnel training on the operations and maintenance of the flight inspection aircraft prior to their delivery. FAA has revised its logistics support plans for the flight inspection aircraft and is contracting separately for initial provisioning spares. This revised sparing plan will significantly reduce FAA's costs. The OIG designed its recommendation to ensure the appropriate type and quantity of aircraft needed to accomplish the Flight Inspection Program were acquired. FAA concurred with the recommendation, and the OIG considered the action resolved.

SUPPLEMENTAL PROGRAM INFORMATION

FAA STRATEGIC PLAN

In the early weeks of the Clinton Administration, the FAA introduced a new approach to long-range strategic planning, laying out a broad agenda to guide the agency during the next decade and beyond. Prepared in conjunction with industry representatives and updated each year, the current plan is organized around six major themes: system safety, system capacity, the competitive vitality of the industry, the international role of the agency, environmental responsibilities, and FAA organization. A seventh concern in the original plan, 21st century aviation challenges, has been dropped since, for practical purposes, the next millennium has already arrived.

A review of FY 1995 shows clear evidence of the cumulative impact of the FAA's commitment to strategic planning. The annual planning effort itself has, with each successive version, become more rigorous and systematic. And the year-by-year improvement in the plan is reflected in an organization which is measurably better managed than ever before.

The FAA in 1995 was a very different entity than it was in 1993 when the first Strategic Plan was introduced. Some of the changes were due to external pressures. The FAA has experienced the same downsizing, both in its work force and its budget, which has affected all other Federal agencies. But other major changes have been the direct result of the agency's own internal efforts. The FAA has attained more than 90 percent of the milestones set in the 1994 Strategic Plan and nearly 80 percent of those detailed in 1995. Each of these accomplishments has strengthened the agency's capacity to fulfill its mission, even when it has fewer resources to draw upon.

The success of the strategic planning process has given the FAA the organizational focus and discipline that is necessary for an agency born in the mid-20th century to continue to serve a vital function in the world of 21st century aviation.

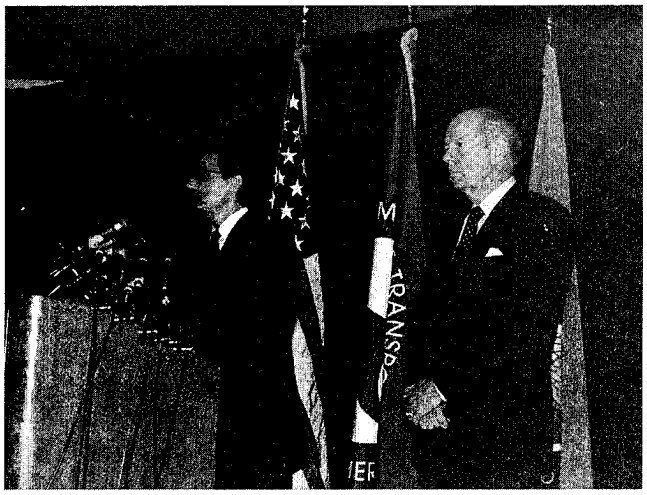
The six objectives around which the Strategic Plan is organized provide a useful framework for summarizing the agency's accomplishments during FY 1995. As the following program highlights attest, impressive gains were achieved across the entire range of FAA involvement. The agency can report progress in improving aviation safety, in expanding capacity, in revitalizing the industry, in influencing policy on the international level, in safeguarding the environment, and in equipping the FAA with the skilled work force and advanced management tools it needs to become more responsive and resourceful in the years ahead.

SYSTEM SAFETY

Eliminate accidents and security incidents in the aviation system with a strategy that targets the most critical areas.

SAFETY THROUGH ASSESSMENTS, INSPECTIONS, AND ACCIDENT INVESTIGATION

Aviation Safety Conference. The Secretary of Transportation and the Administrator of the FAA hosted an Aviation Safety Conference in Washington, D.C., on January 9 and 10, 1995. The FAA developed this conference which brought together more than 1,000 people, including representatives from



DOT Secretary Federico Peña (at podium) and FAA Administrator David Hinson brief reporters at the Aviation Safety Summit: "Meeting the Challenge of Zero Accidents".

industry, labor, Government, and the press. Six workshops, led by aviation industry professionals with 950 workshop participants, generated over 540 ideas for areas which could yield aviation safety improvements.

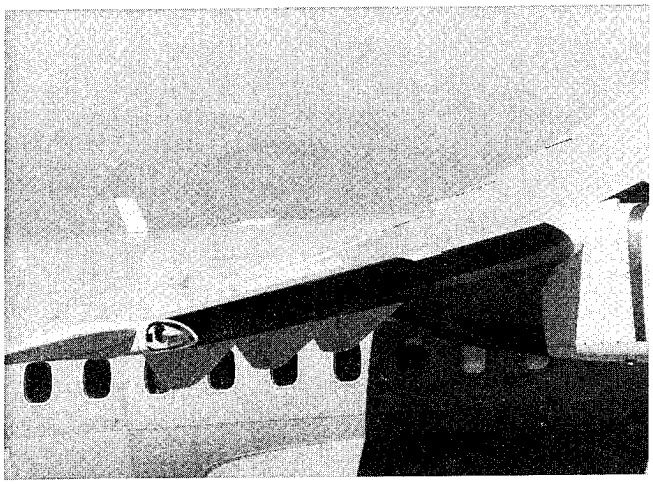
The Aviation Safety Action Plan, "Zero Accidents: A Shared Responsibility," adopted at the Aviation Safety Conference, identified 173 safety initiatives in these critical areas: crew training; new technologies; air traffic control and weather; aircraft maintenance procedures and inspection; flight operating procedures; and safety data collection and use. Of the 91 initiatives targeted for completion in FY 1995, 70 (77 percent) are complete, and the remainder are ongoing or under review. A followup meeting was convened in New Orleans in early December 1995 to evaluate the first year accomplishments and to set the agenda for 1996. The 2-day conference drew an estimated 300 aviation safety experts.

System Safety Office Established. In December 1994, FAA Administrator David Hinson established the office of Assistant Administrator for System Safety. The new office is responsible for identifying safety issues through the collection, analysis, and distribution of safety data and by facilitating the application of system safety methods in the FAA decision process. One of the office's key goals is the creation of an environment that encourages increased sharing and analysis of pre-accident data within the agency and the aviation community. Identifying emerging safety issues, including human factors, will be a cornerstone of the data effort. System safety methodologies will be integrated into the agency's planning and decision-making processes in order to maximize the effectiveness of the agency's safety resources.

Accident Investigation Activities. The FAA's Office of Accident Investigation conducted 38 accident investigations in 1995 including investigation of 14 foreign accidents. These investigations were essential in identifying safety issues and initiating actions to eliminate unsafe conditions. For example, the FAA ordered immediate action relating to the use of Hamilton Standard 14RF/SF and 6/5500/F propellers such as those on the Atlantic Southeast Airlines Embraer EMB-120 turboprop aircraft that crashed near Carrollton, Georgia, on August 21, 1995. These actions included the immediate inspection and possible replacement of certain Hamilton Standard propellers that had been repaired after a previous ultrasonic inspection. This action was subsequently broadened to order aircraft operators to inspect all EMB-120 blades within 50 flights (approximately 5 days).

The Office of Accident Investigation provided key leadership in accident investigation conferences in China, Russia, India, and Brazil. These conferences served as a means to share technical information and investigative techniques and procedures among the international community. The Office of Accident Investigation also acts upon safety recommendations generated by the National Transportation Safety Board (NTSB) and within the FAA.

Icing and the ATR 42/72 Aircraft. After the October 1994 ATR crash, the FAA held a meeting with ATR operators, manufacturers, principal inspectors for the ATR, and the NTSB to review the possible causes. Interim procedures were implemented for dispatch and in-flight operations for icing conditions and a Flight Standards Information Bulletin (FSIB), Operating Restrictions and Procedures: ATR-42 and ATR-72 Airplanes, was issued on November 4, 1994. In response to a recommendation from the NTSB, the FAA created a special certification review team composed of both FAA and French Direction Générale de l'Aviation Civile (DGAC) specialists. As a result of the team's review and numerous tests, the FAA and the French DGAC determined (1) that it was necessary to modify the deicing boots on each airplane to increase its effective span, and (2) that a comprehensive set of procedures and restrictions must be observed by each flightcrew whenever flight into icing conditions is anticipated or inadvertently



Larger deicing boots on the ATR 42 and 72 prevent the formation of ice forward of the ailerons.

encountered. An airworthiness directive was issued to mandate these changes. The certification review team's final report was published on September 29, 1995.

Critical Design Review (CDR) of B-737 Flight Control. Accidents have raised questions regarding the operational safety of the B-737 flight control system. In October 1994, the FAA initiated an extraordinary effort to determine whether any design problem may have been overlooked. A nine-member team composed of engineers, pilots, and airworthiness inspectors from the FAA, NTSB, U.S. Air Force, and the Canadian Civil Aviation Authority worked for over 5 months reviewing the flight control system design and service history of all models of the B-737. While the team did not find any design issue that could lead to a definitive cause of the accidents, a number of recommendations were made regarding design and maintenance improvements. The recommendations for FAA action as reported in the CDR report are currently being addressed.

Harness and Seat Impact Evaluations. Specialized crashworthiness assessments, including a series of dynamic impact tests of parachutist restraint systems, were conducted at the FAA's Civil Aeromedical Institute (CAMI), in collaboration with parachute harness manufacturers and the U.S. Parachute Association. Specialized testing of a National Aeronautics and Space Administration (NASA) shuttle orbiter crew seat and restraint system helped validate the design of a seat proposed for production within the next year. Testing of an emergency medical technician's seat, designed for use in the MD-90 helicopter, led to improved safety aboard air ambulances.

Child Restraint Systems. The FAA worked with the National Highway Traffic Safety Administration in the evaluation of child restraint systems. Data from a series of dynamic impact tests will be used to identify seats that best protect occupants in automobiles and on aircraft. Because of the diversity of child restraint systems on the market and the many variations in aircraft seat configurations, CAMI conducted evaluations of two prototype child restraint devices that airlines might offer passengers. The most promising system, tested with the assistance of Transport Canada, features a convertible device adaptable to forward facing for children weighing between 20-40 pounds and aft facing for children weighing less than 20 pounds.

FAA Deputy Administrator Linda Hall Daschle with two FAA-approved child restraint systems to be used during air travel.

Hamilton Standard Propellers. Within the past 2 years, there have been three blade failures on certain Hamilton Standard Propeller models. The FAA determined that the three fatigue fractures could be traced to corrosion-induced pitting of the blades. A review of the manufacturing process discovered that the cork was cleaned with chlorine, the propeller blade with water. Not all blades were completely dry, however, when inserting the cork. This combination of water plus chlorine caused the corrosive pitting of the taper bore surface. The review also revealed that the stress concentrations at the corrosion pits caused cracks that resulted in fatigue fractures in the area previously believed to be subject to lower stress.

Tundra Tires. The FAA conducted extensive flight testing of oversized (Tundra) tires to determine their effects on the performance and handling of the Piper PA-18 airplane. The tests were initiated at the request of the NTSB as a result of its investigation of a number of fatal accidents that occurred in Alaska involving aircraft equipped with oversized tires. The tests evaluated four different oversized tires and required over 30 hours of flight testing. The evaluation addressed climb speed performance, stall speeds, and maximum cruise speed changes. The test results indicate that use of oversized tires does not have a significant adverse effect on the handling qualities of the aircraft if it is operated within its approved gross weight and center gravity limits. An advisory directive (AD) was not issued because the

testing determined that no unsafe conditions existed. Research and development projects have been initiated, advisory material has been distributed, and an update is scheduled for completion during FY 1996.

Flight Safety Critical Aircraft Parts (FSCAP). The FAA and the Department of Defense (DOD) are cooperating in an effort to stop unapproved military aircraft parts from reaching the civil aviation sector. A process action team was established to review existing military surplus parts documentation and requirements and provide recommendations to revise processes to control parts identified as FSCAP. To date, the team has identified regulations and guidance within the DOD and FAA that should be amended or developed to formalize the FSCAP program. The team provided recommendations to ascertain methods of (1) identifying dual use FSCAP; (2) identifying appropriate documentation to accompany all FSCAP prior to disposal; (3) developing a new DOD coding structure for mutilation of undocumented FSCAP; (4) ensuring interservice and interagency sharing of information relevant to sale of parts; and (5) safety inspections of FSCAP as a condition of sale or donation.

Suspected Unapproved Parts (SUP). The FAA Suspected Unapproved Parts Task Force conducted a thorough review of the issue and devised a comprehensive plan to more aggressively address SUP's. The task force outlined a number of recommendations to be implemented in four stages: immediate action, transition, operational phase, and sunset. Recommendations identified areas where FAA SUP's actions can be enhanced to further "choke off' points at which unapproved parts could enter the aviation market.

Airport Inspections. During FY 1995, 380 airports were inspected for compliance with 14 CFR, Part 139, by the FAA's 25 certification inspectors. Major emphasis was placed upon those airports installing improved taxiway sign systems. The FAA also collected safety data on 5,500 airports that are open to the public. This information appears in aeronautical publications and charts used by pilots.

Digital Systems Validation (DSV). During FY 1995, the DSV program continued to address certification and airworthiness standards and techniques as they relate to emerging digital flight controls and avionics systems. The hardware devices employed in typical digital systems are advanced, highly complex integrated circuits which are developed by software, contain software, and may comprise 500,000 or more logic gates. The design, development, and testing of these devices pose serious challenges for the industry and the FAA relative to the flight safety issues surrounding airworthiness and certification. Hardware devices similar to these are used extensively in the B-777 aircraft in flight critical applications.

The program recently published the "Pilot-Vehicle Interface and Artificial Intelligence Handbook" and initiated two new projects: (1) the assessment of software structural coverage requirements, RTCA, Inc. DO-178B, "Software Considerations in Airborne Systems and Equipment Certification," and (2) the evaluation of formal methods of partitioning integrated modular avionics software systems in order to protect separate applications from corrupting one another. A Digital Systems Validation Handbook is in preparation, which will cover critical hardware, software, and system issues arising from the use of highly advanced technologies. The handbook will include individual comprehensive technical tutorials with worked examples.

Safety Performance Analysis System (SPAS). This automated decision support system, designed to aid the FAA in targeting its inspection and certification resources on those areas that pose the greatest aviation safety risks, is now operational at three sites: FAA headquarters, Eastern Region headquarters in New York, and the FAA Technical Center in New Jersey. SPAS can compare the current-to-past performance of an air carrier to its own records or to the records of similar-sized carriers. Analysis which once took an inspector several days to perform, can now be done in a matter of hours.

The first of the SPAS software was installed in FAA field offices in late September and will be available to more than 180 inspectors at 56 FAA offices throughout the country by February 1996. It is expected that the more than 2,500 aviation safety inspectors will be trained and using SPAS by 1998. The system is being considered for use by other countries and agencies. SPAS-II, a more comprehensive analytical tool, is scheduled for release in FY 1997.

SAFETY THROUGH RULEMAKING

Air Carrier Training Rule. In a notice of proposed rulemaking (NPRM) issued December 8, 1994, the FAA proposed to revise the training and qualification

requirements for certain air carriers and commercial operators. The final rule, issued December 14, 1995, requires some certificate holders operating under 14 CFR, Part 135, and permits others to comply with 14 CFR, Part 121, training, checking, and qualification requirements; mandates crew resource management (CRM) training requirements for Part 121 operators; and allows certain Part 135 certificate holders to take advantage of sophisticated aircraft simulator training technologies presently available to Part 121 certificate holders. The new rule makes some Part 135 training requirements as comprehensive as Part 121 requirements and incorporates recent knowledge about human performance factors.

Increased Flight Data Recorder (FDR) Parameters. On March 8, 1995, the FAA solicited comments from the public, aircraft manufacturers and operators, and manufacturers of FDRs on the recent recommendations issued by the NTSB on increased FDR's parameters. The notice requested comments on any aspect of the NTSB recommendations, including the potential safety benefits and financial costs for each of the NTSB recommendations. On June 15, 1995, the FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) to recommend disposition of the NTSB recommendations in the form of an NPRM. Consensus was not reached, however, by the ARAC, and the project was returned to the FAA.

FAA Administrator David Hinson (front row, center) with members of the "One Level of Safety" rulemaking team.

Commuter Operations and General Certification Requirements. In December 1994, DOT and FAA announced a major initiative to propose to upgrade the safety standards for commuter airlines to the same levels as those for major airlines. Operating on an accelerated schedule, a DOT/FAA team produced an NPRM within 100 days. The NPRM solicited comments on FAA's proposal to amend the regulations to require that all scheduled passenger service conducted with 10 or more passenger-seat airplanes be conducted under Part 121.

The final rule was published December 14, 1995, with a 15-month implementation period anticipated. The rule revises the requirements concerning operating certificates and operations specifications. The rule also requires certain management officials for all operators under Parts 121 and 135 and extends the Age 60 Rule component to pilots of Part 135 aircraft. The rule is intended to increase safety in scheduled passenger-carrying operations and to clarify, update, and consolidate the certification and operations requirements for operators who transport persons or property by air for compensation or hire.

Crew Pairing Final Rule. On April 21, 1995, the FAA amended its pilot qualification requirements for air carrier and commercial operator pilots by upgrading existing operating experience requirements, establishing a new kind of operating experience requirement, and adding requirements that would reduce the potential for an inexperienced pilot-in-command to be scheduled to fly with an inexperienced second-in-command pilot. Recent practices and trends necessitated revising current pilot qualification regulations in the interest of safety to upgrade minimum crew experience and to require pilots to use newly developed knowledge and skills in actual line operations within a short time after training. The final rule was published April 27 and, for the first time, established the aircraft specific experience that pilots must collectively have in that type of airplane before they can be scheduled to fly together.

NPRM Child Restraint Systems. In a notice published June 9, 1995, the FAA proposed to withdraw its approval for the use of booster seats and vest- and harness-type child restraint systems in aircraft during takeoff, landing, and movement on the surface. The notice emphasized the existing prohibition in all aircraft against the use of lap-held child restraint systems (including belly belts). During an aircraft crash, the banned devices may put children in a potentially more hazardous situation than the allowable alternatives. The proposal does not affect use of other types of approved child restraint devices.

This NPRM, if adopted as a final rule, will prohibit the use of booster seats, vest/harness type devices, and belly belts during takeoff and landing.

Emergency Evacuation Demonstration Procedures. Acting upon a recommendation from the ARAC, the FAA issued an NPRM on July 11, 1995, proposing to revise the emergency evacuation demonstration procedures requirements for transport category airplanes. The proposal would allow certain alternative procedures in conducting full-scale emergency evacuation demonstrations. Additionally, the operational requirements for domestic, flag, and supplemental air carriers and commercial operators of large airplanes would be revised to require each operator to conduct a partial demonstration of emergency evacuation procedures upon initial introduction of a type and model of airplane into passenger-carrying operation. The proposed changes are intended to make full-scale emergency evacuation demonstrations safer for participants, to codify existing practices, and to ensure that each operator demonstrates the effectiveness of crewmember training by conducting at least a partial evacuation demonstration.

Final Rule on Flight Attendant Duty Time Restriction and Rest. This rule establishes limits on the amount of time an operator can schedule work hours for flight attendants during duty period. The rule also establishes a minimum scheduled rest requirement for flight attendants. The rule was issued August 19, 1994. Due to delays caused by challenges to the rule in the Court of Appeals and in the Supreme Court, compliance with the rule must be accomplished by February 1, 1996.

Special Federal Aviation Regulation (SFAR) 71 - Hawaii Air Tours. On October 26, 1994, FAA issued SFAR 71 for air tour operators in the state of Hawaii. This rulemaking was necessitated by increases in the number of accidents occurring in Hawaii's air tour industry. Since its implementation, there have been no fatal accidents involving air tour operators in Hawaii.

NPRM, Pilot, Flight Instructor, Ground Instructor, and Pilot School Certification Rules. This proposed rulemaking, published August 11, 1995, proposes to revise the certification and training requirements for pilots, flight instructors, ground instructors, and the operation of pilot schools approved by the FAA. The proposals are intended to update training, certification, and recent experience requirements to be more compatible with the current operating environment and the evolving demands of the National Airspace System (NAS).

Revision of Part 67 Medical Standards and Certification Procedures. On October 17, 1994, the FAA proposed an extensive amendment to its airman medical standards and medical certification procedures. The NPRM to revise Title 14, 14 CFR, Part 67, Airman Medical Standards and Certification Procedures, if adopted as a final rule, would revise the standards for airman medical certification to reflect current medical knowledge, practice, and terminology. Over 5,000 comments on the NPRM were received, including approximately 1,000 congressional inquiries.

The FAA proposed to implement a number of recommendations resulting from a comprehensive review of the medical standards announced in previous notices. In the same notice, the FAA also proposed to revise the duration of third-class airman medical certificates based on the age of the airman for operations requiring a private, recreational, or student pilot certificate.

Advisory Circular (AC) 120-51B, Crew Resource Management (CRM) Training. This AC, which was issued January 3, 1995, includes new CRM concepts and addresses flight attendant CRM training.

AC 121-31, Dispatch Resource Management Training. This AC, which was issued February 7, 1995, complements the resource management material already provided for flight crewmembers.

AC 145-5, Repair Station Internal Evaluation Programs. This AC was issued on September 27, 1995. The guidance enables repair stations to initiate internal evaluation programs to improve oversight and quality assurance and meet the proposed new Part 145 rulemaking requirements.

AC 135-17, Pilot Guide. Issued December 1994, this AC contains information and recommendations to assist pilots in conducting ground operations during weather conditions conducive to aircraft icing. In addition, it contains information that can be used by other flight crewmembers, maintenance, servicing, and other aviation personnel responsible for ground deicing and aviation safety in general.

Amendment to Public Aircraft Operations. The Independent Safety Board Act Amendments of 1994 substantially revised the definition of public aircraft. This definition reclassifies many public aircraft operations as civil aircraft operations. These amendments became effective April 23, 1995. AC 00-1.1, Government Aircraft Operations, was issued on April 19 to provide guidance on whether particular Government aircraft operations are public aircraft or civil aircraft operations under the new statutory definition of "public aircraft." Joint Flight Standards Handbook Bulletin for Airworthiness (HBAW 95-04), Air Transportation (HBAT 95-06), and General Aviation (HBGA 95-02) were issued in June. These bulletins contain information and guidance to be used by aviation safety inspectors when working with Government-owned aircraft operators. They also contain information on the new definition of "public aircraft."

Robinson R-22/R-44 Special Training and Experience Requirements. As a result of a number of fatal accidents due to main rotor/airframe contact, on February 23, the FAA established special training and experience requirements for pilots operating the Robinson model R-22 or R-44 helicopters to maintain safe operation of those helicopters. The FAA also established special training and experience requirements for certified flight instructors conducting student instruction or flight reviews. Many of the Robinson helicopter accidents have been attributed to pilot performance or inexperience, leading to low rotor revolutions per minute (RPM) or low "G" conditions that resulted in mast bumping or main rotor-airframe contact accidents.

SAFETY THROUGH RESEARCH

Airline Cabin Evacuation. As part of a critical infrastructure upgrade, a B-747 fuselage was purchased to complement the existing single aisle aircraft cabin evacuation facility at CAMI. The Cabin Safety Research Program, as recently developed by the FAA, Transport Canada Authority, and the European Joint Aviation Authorities, calls for an expanded program of evacuation research at CAMI. The release of the proposed advisory circular on emergency evacuation certification highlighted the need for an expanded research capability to assist in determining when the certification process may substitute computer analysis for full-scale evacuation tests.

Aircraft Icing. During FY 1995, the FAA Technical Center, in cooperation with NASA Lewis Research Center, continued to study the susceptibility of turboprop airplanes to ice-contaminated tailplane stall and to investigate the effects of ice shape and roughness on modern airfoils. Efforts also continued in the development of onground aircraft ice detectors and related technologies. The time of effectiveness of new and advanced deicing and anti-icing fluids under various icing weather environments was investigated and used to establish holdover-time guidelines.

Electromagnetic Environment. Electronic systems, which perform flight critical/essential functions, must be operational or have the ability to reset automatically after exposure to the electromagnetic environment. During FY 1995, efforts continued in the development of technologies to measure, model, analyze, and simulate the electromagnetic effects of high intensity radiated fields (HIRF) and lightning on new and advanced aircraft structures and systems. Natural sources such as lightning and manmade sources such as ground-based and airborne emitters and portable electronic devices are included in the study. The results were incorporated into the HIRF advisory circular, the user manual, lightning advisory material, and other related technical reports.

Aviation Systems Fire Safety. The purpose of this agency-sponsored research is to reduce the risk of fire-related injuries and increase the survival rates for occupants during in-flight and post-crash fires. The following are examples of activities during FY 1995 which supported this objective:

Reducing the threat of in-flight fires. Disclosures were filed on two safety inventions directed at in-flight fire threats to aircraft. One of these was an improved capability to control smoke in the passenger cabin. The other was a fire suppression and inerting process that would not adversely affect the respiration of the passengers. Testing and analysis were completed on a prototype gas separation membrane producing nitrogen-enriched air for potential use in suppression of cargo compartment fires. An advanced fire physics computer code was developed to the point where large-scale experimentally observed vortical motions and fire plume pulsations associated with large fuel fires could be simulated through computer calculations. The behavior of an external fuel fire around an aircraft fuselage was then

characterized and displayed on video derived from computer-generated graphics.

Combustion toxicology colloquium. An international colloquium on advances in combustion toxicology was hosted at CAMI, supported by the Aircraft Certification Service. This international meeting was designed to review the state of the art in combustion technology and to define new research directions leading to enhanced survival in aircraft fires. Recommendations were made for development of methods to minimize smoke production and protect humans in such environments; for generating additional smoke toxicity data to help improve computer models of aircraft cabin evacuation; and for new analytical methods that will better define the toxic gas exposure as well as the postmortem status.

Improved fire- and smoke-resistant materials. The National Materials Advisory Board completed an FAA-funded study on improved fire- and smoke-resistant materials for commercial aircraft interiors. Experts, worldwide, were asked to develop recommendations on optimal strategies on material research which the FAA might follow. In conjunction with this study, nine new research grants were awarded to academic institutions for the investigation of material and processes that might be used to someday construct a totally fire resistant aircraft cabin. The materials of interest include polymer-silicate nanocomposites, polybenzoxazines, polysialates, polychlorophosphazenes, triazine resins, fullerenes, and inorganic-organic polymer hybrids.

Theoretical and experimental work at the FAA Technical Center in FY 1995 has elucidated the relative roles of thermodynamic and chemical kinetic controlling parameters in the flammability of polymeric materials. Finally, work accomplished through the Small Business Innovative Research program resulted in a surface acoustic wave chemical microsensor for early fire detection, a report on gaseous products emitted by burning polymers, and an evaluation of the effectiveness of fire retardant chemicals under severe fire exposure conditions that typify aircraft crashes.

Halon replacement agents. The fire suppression agents presently used on board transport aircraft, Halon 1211 and 1301, were banned from further production on January 1, 1994, because of their effect on the earth's ozone layer. Since the present certification requirements are based on Halons, performance-based minimum standards must be developed before replacement agents can be approved. In FY 1995, minimum performance standards and a standardized test method for lavatory trash receptacle systems were developed. The development of standards for hand-held extinguishers, cargo compartment systems, and engine systems progressed in FY 1995 and will continue in FY 1996. The International Halon Replacement Working Group (IHRWG) prepared a final report: DOT/FAA/CT-95/9, "Chemical Options to Halon for Aircraft Use."

Aircraft systems fire tests. Testing was performed in the following areas: (1) compliance with present standards of seat cushions now in use, (2) development of a fire test method for aircraft blankets, (3) full-scale tests of fire hardening materials and concepts to delay fuselage burnthrough by an external fuel fire, and (4) fire test requirements for flight data recorders. Agency research personnel also provided support to the International Materials Fire Test Working Group for the publication in early FY 1996 of the undated *Aircraft Material Fire Test Handbook.*

Advanced Material/Structural Safety Research. This ongoing research program has a twofold purpose: (1) to acquire knowledge of the properties of composite and advanced materials to support certification and airworthiness regulations; and (2) to address crashworthiness structural safety and ways to increase protection of passengers and crew. Major objectives in FY 1995 were to complete the data base for damage tolerance of flat and curved panels, to complete the composite material aircraft vertical drop test at the (NASA), and to complete the rotorcraft water impact flotation analyses. Information handbooks on manufacture, repair, and inspection techniques for composite aircraft, the FAA Fiber Composite Analysis and Design Manual, and the FAA Failure Analysis Handbook were updated.

Propulsion and Fuel Systems Research. This program addresses safety and environmental issues as new fuels and materials are employed in the next generation aircraft. Products in progress or completed included the development of performance criteria for turbine engine rotor and onboard failure diagnostic techniques; a generic analytical model to evaluate turbine engine performance during hail or water ingestion; conducting research to assure that unleaded aviation gasolines can be used without a negative impact on safety and system reliability; and

developing fuel specification(s) for unleaded aviation gasolines.

Aging Aircraft. Aging airframe structures have shown increasing susceptibiity to fatigue damage and corrosion that could pose a threat to flight safety. The FAA maintains an aggressive research program which targets three possible approaches to risk reduction: structural integrity, maintenance and inspection, and surveillance.

Structural integrity. In FY 1995, researchers investigated the effect of pre-existing corrosion on residual strength, crack growth rates in a corrosive environment, and fretting corrosion in riveted joint designs. Crack growth-based methodologies were developed for nonrotating, safety critical components of aircraft engines. Other efforts included conducting a video landing loads survey at a major commercial airport and measuring and analyzing flight loads data for transport and commuter category aircraft.

Maintenance and inspection. In FY 1995, new guidance material was developed or revised to define the corrosion prevention and control technology for commercial aircraft and to establish the applicability of bonded boron/epoxy repair patches and other alternate structural rehabilitation and repair strategies. New or updated practices for repair, maintenance, and equipment documentation were prepared for use by FAA and industry maintenance and repair station personnel. Materials and course curricula were developed to train FAA personnel in the performance of nondestructive inspection, along with weighted job task definitions for the aviation maintenance technician (AMT) in support of regulations that mandate oversight by FAA inspectors.

Surveillance. Past year activities included the development of reliable, cost-effective new methods or improvements in mature methods for detecting crack, inclusions, and imperfections in titanium alloys used in engines; a software tool to provide a damage tolerance assessment of aircraft fuselage skin repairs; and methods and tools to predict the onset of widespread fatigue damage and to detect flaws in airframe structural and mechanical components. Agency researchers also validated the inspection system prototypes at the Aging Aircraft Nondestructive Inspection Validation Center in Albuquerque, New Mexico. Work was begun on supplemental inspection documents for commuter aircraft.

Aircraft Catastrophic Failure Prevention Research (ACFPR). The intent of this research is to reduce catastrophic accident risks and the number of hull losses, injuries, and fatalities. Work completed or underway in FY 1995 included the rotorcraft health and usage monitoring system's flight demonstration; phase I of the NASA/FAA joint flight simulation program on propulsion-controlled aircraft; and the uncontained turbine rotor fragmentation analytical study. A new effort was begun to develop a prototype risk assessment methodology for demonstration in 1998. The new methodology may be used as a tool to quantify the hazards associated with aircraft failures and failures of critical aircraft systems.

SAFETY THROUGH IMPROVED AIRPORT TECHNOLOGY

Alternative Airport Pavement Marking Materials. In 1992, the FAA Technical Center initiated a project to identify the most promising products and techniques available for marking airport pavement surfaces. To ensure that the findings would be beneficial to all airports around the country, materials were selected that could adhere to both concrete and asphalt surfaces and withstand both winter and summer climates. Selected materials included two epoxies, two water-based paints, and one methacrylic resin.

The test sites, chosen for their various climatic conditions, were Atlantic City, Pittsburgh, and Phoenix. These tests have now demonstrated that the methacrylic resin and the two epoxies are suitable alternative pavement marking materials for airport applications. However, the white epoxies tended to yellow over time. The addition of silica and/or glass beads improved the visibility of the markings and minimized rubber adherence. The tests also revealed that the initial cost of the alternative marking materials is much higher than that of the water-based materials currently being used.

Soft Ground Arresting System for Airports. Aircraft can and do overrun the ends of runways, sometimes with disastrous consequences. To minimize the hazards of overruns, the FAA requires a safety area of 1000 feet in length beyond the end of the runway. If no space is available for a safety area, soft ground arrestors (any material that will deform readily and reliably under the weight of an aircraft tire) provide an engineered alternative to restore the margin of safety.

In September 1994, the FAA and Engineered Systems Company of Aston, Pennsylvania. entered into a Cooperative Research and Development Agreement (CRDA) to test new materials and methods. The first test was performed on an arrestor bed of cast-in-place cellular concrete using the agency's Boeing 727. The test revealed that the energy absorbing quality of the material was excellent, but uniformity of strength was unacceptable. A second test bed made from pre-cast cellular concrete indicated a product with very uniform strength. The Office of Aviation Research scheduled a larger test bed for December 1995 at the FAA Technical Center.

In May 1995, the FAA entered into a CRDA with The Port Authority of New York and New Jersey whereby the FAA would provide the Port Authority with the design of an arrestor bed for the overrun area at runway 4R at JFK International Airport. For its part, the Port Authority authorized funding of up to $4.5 million for the installation of five arrestor beds at their airports. The FAA will use the knowledge it gains from monitoring and studying these beds to prepare standards for installations across the Nation. The initial bed is planned for JFK International's Runway 4R overrun in early 1996.

SAFETY THROUGH HUMAN FACTORS

National Plan for Human Factors Research. While advanced technology has reduced or eliminated many of the hazards of air travel, new technology has also created new types of risks. In recent years, for example, human error has been cited as a factor in between 60 and 80 percent of all aviation accidents. A clearer understanding of the human element in aviation is essential to future gains in safety. Consequently, the FAA invests approximately $30 million yearly on human factors research.

In FY 1995, the FAA, in a joint endeavor with DOD and NASA, released a comprehensive plan for conducting and applying human factors research to the National Airspace System. The plan, titled *"The National Plan for Civil Aviation Human Factors: An Initiative for Research and Application,"* is part of the effort to reach the goal of "zero accidents" set forth at the Department of Transportation's industrywide safety conference in January 1995.

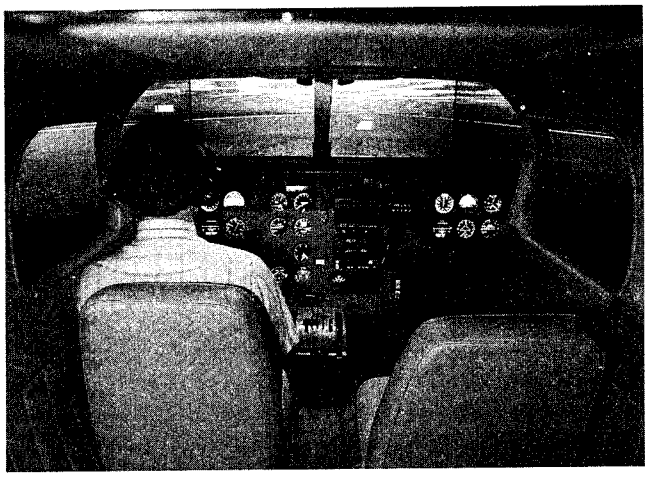
The initiative has three principal goals: identifying operational needs and problems involving human performance; guiding research programs to address the human element; and eliciting the participation of the Nation's top scientists and aviation professionals in Government, industry and universities. The plan also provides for the sharing of research results among the participating Government agencies and the private sector to increase the speed and efficiency by which new concepts in human performance can be tested, validated, and incorporated into the national aviation system. In addition to FAA, DOD, and NASA, the plan was prepared in partnership with the aviation industry and the academic community.

Human-Centered Automation Research. Thirteen air carrier accidents within the past 20 years have cited automation as a possible contributing factor. Recent FAA research seeks to verify problems related to flight deck automation design, operation, use, and misuse; then develop solutions to these problems. An initial taxonomy of automation issues was identified, is now being verified, and will provide the framework for prioritizing problems to be addressed.

Information Transfer. Approximately 70 percent of all incidents reported to the Aviation Safety Reporting System cite information transfer as a problem. A joint research task with NASA has focused on air-ground system integration issues associated with the implementation of digital communication, i.e., data link. The results have influenced the minimum operating performance standards for data link.

Aeronautical Charts. The NTSB has implicated chart design in nine aircraft crashes, and they are recognized by most pilots as being difficult to read. A new format was developed, in cooperation with scientists at the Volpe National Transportation Systems Center, for instrument approach procedure charts which apply human factors to the presentation of landing and missed approach information. The new chart design is now being used by 16 Part 121 air carriers.

General Aviation Human Factors Research. Initial studies in this recently developed program of research at CAMI employed the Institute's basic general aviation research simulator to identify possible performance gains associated with the use of integrated displays and altitude or heading "bugs." While both experienced and less experienced pilots demonstrated significant performance gains when using an integrated display (horizontal situation indicator [HSI]), only the less experienced pilots evidenced improved performance using "bugs."



A view from inside the Advanced General Aviation Research Simulator.

Advanced General Aviation Research Simulator. The new, high fidelity, reconfigurable simulator at CAMI is being used to support general aviation human factors research programs. The device, presently configured as a Piper Malibu, can be readily configured as a Cessna Skyhawk II or as a "glass" cockpit for examination of advanced displays. The architecture is flexible enough that it may, with additional hardware and software, be used to simulate multi-engined turboprop/turbojet aircraft. The 150-degree out-the-window visual system provides a realistic flight environment. Performance data collection with as many as 200 variables can be sustained for up to 4 hours. Acceptance tests have been flown successfully with agency and industry test pilots, and the device is presently being used to evaluate autonavigation and control systems in support of aircraft certification.

Deputy Administrator Linda Hall Daschle was one of the first to experience the capabilities of CAMI's Advanced General Aviation Research Simulator (AGARS).

Laboratory studies of fatigue provide parameter-defining data for operational studies of shift work.

Shift Work and Fatigue. FAA, NASA, and DOD scientists have teamed up to assess the impact of fatigue on NAS operators and to develop appropriate countermeasures to eliminate or mitigate adverse effects on performance. A video was developed and distributed through safety seminars to general aviation pilots on recognizing and dealing with fatigue. Additionally, an extensive survey of regional airline operations was completed and is being analyzed. Finally, two new projects were initiated: one looking at ATC shiftwork and fatigue and the other at the effects of napping on the midnight shift as a possible fatigue countermeasure for air traffic control specialists (ATCS) and other NAS operators working the night shifts.

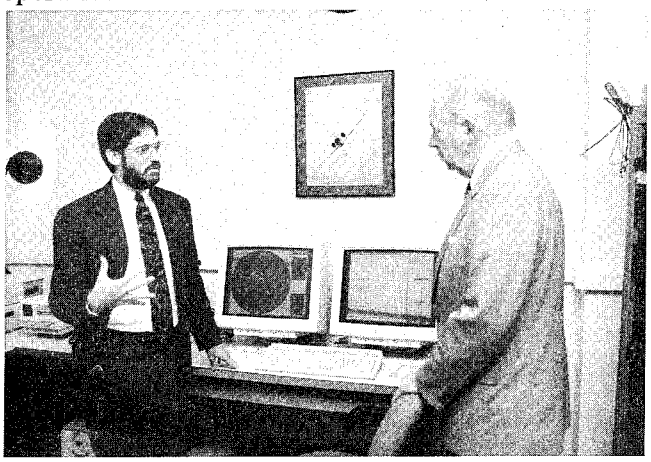
Other fatigue-related research projects currently underway involve (1) the evaluation of sleep, fatigue, jet lag, and performance changes associated with the work schedules of flight crewmembers, and (2) a joint project with scientists from Walter Reed Army Institute for Research regarding the evaluation of a drowsiness detection system. Coordination of these research efforts will ensure applicability of the outcomes to both civilian and military work forces. Outcomes will be used to identify useful fatigue countermeasures and improved work schedules.

Advanced Qualification Program (AQP). This is an initiative to systematically develop an air carrier pilot training program which integrates both technical and crew resource management

performance requirements. The FAA initiated development of training center provisional AQP's for five commuter category aircraft in order to facilitate participation by regional airlines in AQP. Currently, four air carriers have implemented the program.

Automated Performance Measurement System (APMS). AQP requires that performance data be accessible to the FAA. The FAA is developing the APMS to provide this capability. A prototype, which provides information on in-flight aircraft performance parameters that can then be analyzed in the context of crew task performance and used to address training or procedural changes to improve NAS operations, was delivered in FY 1995.

Airway Facilities Work Force Human Factors. Standardized symbology for use in Airway Facilities Operations Control Centers (OCC) was developed. Testing and validation of these symbols is underway at the FAA Technical Center laboratory. Standardized symbology is essential for the efficient operation of the OCC.



Administrator Hinson (r) briefed by Dr. Mark Rodgers on SATORI capabilities.

Systematic Air Traffic Operations Research Initiative (SATORI). Developed by CAMI, the SATORI system uses radar, weather, and voice data recorded at ATC facilities to graphically recreate operational errors and other events. This system provides a valuable tool for assessing the dynamics of ATCS's in both the en route and terminal environments.

Field testing of the en route SATORI is complete. The system is being used presently at the Atlanta Air Route Traffic Control Center (ARTCC) and will be deployed at four additional centers in 1996. SATORI for terminal radar approach control (TRACON) provides for the recreation of ATC events in the TRACON environment and is currently undergoing initial testing at CAMI.

ATC Pre-Training Screen (PTS). An analysis of the air traffic control specialist (ATCS) applicant psychological screening procedures provided information that will be used in the selection process to ensure that applicants possess the optimal mix of psychological traits needed to perform effectively as controllers.

Monitoring of Alcohol and Drug Abuse in Pilots in Fatal Aviation Accidents. Analysis of available FY 1995 data shows positive alcohol (greater than or equal to .04 percent) in about 6 percent of cases, prescription drugs in 12 percent, over-the-counter drugs in 18 percent, and controlled dangerous substances in 5 percent (CDS I-II) and 3 percent (CDS III-IV) of cases. During the past year DNA analysis of forensic toxicology cases has been instituted at CAMI on an ongoing basis.

Neuropsychological Assessment of Pilots. In FY 1995, the technology transfer process, as implemented at CAMI, permitted Georgetown University to commercialize the FAA's initial investment in the development of an automated cognitive function test. This automated test (Cogscreen) will be selectively utilized in neuropsychological assessment of airmen seeking medical certification. Cogscreen is also being refined for application by selective testing of such clinical groups as post-head injury, HIV-positive, and post-alcohol abuse/dependency subjects.

FAA Human Factors Publications. Research efforts in FY 1995 produced a number of valuable publications, including:

"Human Factors in the Design and Evaluation of Air Traffic Control Systems Handbook" provides assistance in evaluating information displays for future ATC systems.

"Human Factors Guide for Aviation Maintenance." This newly published guidebook offers ways to reduce human error and improve performance levels of airline maintenance technicians, managers, and safety inspectors. Along with the distribution of the guidebook, the FAA conducted nine workshops on human factors in aviation maintenance, including one

in Anaheim which was attended by over 800 aviation mechanics and other safety personnel.

"Aircraft Certification Human Factors and Operations Checklist for Standalone GPS Receivers." Released in April 1995, this handbook provides a job aid for aircraft certification specialists. Now in use in the United States, Canada, and Australia, the handbook has promoted standardization of certification procedures and reduced the uncertainty among FAA certification specialists, as well as GPS receiver manufacturers. Its use has reduced the FAA's need to provide special training to certification specialists.

"FAA Human Factors Internet." The aviation community can now receive information about the FAA's human factors programs via an Internet home page. The new capability puts the National Plan for Civil Aviation Human Factors on the World Wide Web and initiates an ongoing effort to provide products from FAA human factors research and applications programs to the aviation community. The Internet home page address is HTTP://WWW.FAA.GOV/AAR/Human-Factors/Welcome.HTM

SAFETY THROUGH DATA SHARING

Air Transportation Partnership for Safety Programs. Since June 1994, representatives of the FAA's Dallas/Ft. Worth Flight Standards District Office and American Airlines have teamed up to review safety concerns and incidents reported voluntarily by the airline's pilots. The team examines each safety report and recommends corrective action to the airline, union, and/or the FAA. The program is designed to complement existing approaches for promoting aviation safety through alternatives to legal enforcement action. Intentional infractions of the FAR and serious safety problems that would be detected by the FAA enforcement action are excluded. As of October 1995, the team had reviewed over 3,800 reports. The FAA is preparing policy guidance to expand the use of these programs within the air transportation industry.

The Aviation Safety Conference in January 1995 adopted voluntary data sharing programs as a major initiative. These programs, intended for major air carriers, commuters, and major domestic repair stations, encourage employees of certificate holders participating in the programs to disclose important safety information without fear of legal enforcement.

Flight Operations Quality Assurance (FOQA). Three working groups at the January Safety Conference identified flight operations quality assurance programs as a major partnership action to achieve zero accidents. This initiative will give the FAA access to in-flight recorded data collected by airlines to improve safety in the following areas: flightcrew performance; training; air traffic procedures; airport maintenance and design; and aircraft operations and design. Airline participation is voluntary. In July, the FAA initiated an FOQA demonstration study in cooperation with industry in response to this recommendation. A model program has been initiated with some airlines.

Continued Airworthiness Assessment Methodologies (CAAM) Process. The Aerospace Industries Association (AIA) and the FAA are beginning to develop common methods to identify, prioritize, and resolve safety-related issues occurring with aircraft engines. This activity has resulted in the formation of a safety management process that uses statistical methods, standardized hazard severity levels, conditional probabilities, and resolution criteria to focus limited resources in areas that offer the greatest potential for accident prevention.

Trial implementation of CAAM with Pratt and Whitney has yielded many successes. High risk problems have been identified and mitigated more quickly and, in several instances in FY 1995, regulatory action was avoided based on Pratt and Whitney's effective voluntary control program. As a result of this process, six high risk areas warranted the issuance of airworthiness directives. The FAA is documenting the CAAM process in an advisory circular that will be available to the public in 1996. On the basis of the successful trial usage, the FAA plans to expand the use of the process to other applications.

Automated Program Tracking. The FAA's Southern Region Flight Standards Division continued its efforts as the lead organization for reengineering the National Flight Standards Information System. Two data bases, the program tracking and reporting subsystem and vital information system, are critical elements to achieve an effective aviation safety analysis system. Sandia Laboratories is interviewing groups of system users to determine their data base requirements. Additionally, the Georgia Institute of Technology has been awarded a grant to optimize the

aviation safety monitoring process through data quality engineering program applications.

Aviation Standards Information System (ASIS). The FAA is replacing the Aircraft Management Information System (AMIS) with a new system which uses leading-edge personal computer/client server-based information system technology. When completed, the new ASIS will be able to track the origin, serial number, and shelf life of critical aircraft parts.

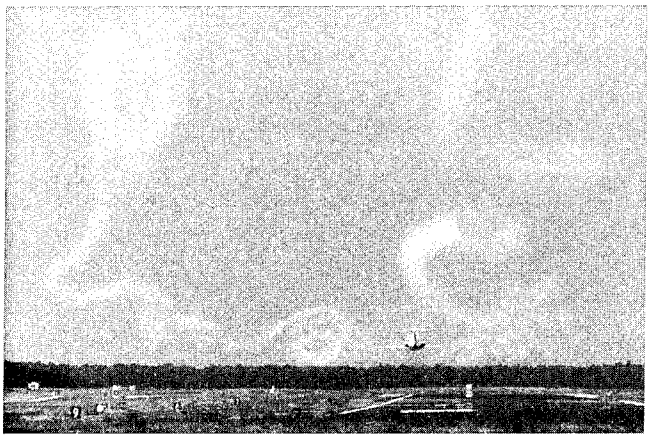
The new ASIS has four key parts: flight operations, fleet maintenance, AIRNAV (a central data source for all navigation aids information), and centralized scheduling. ASIS requires real-time data from users and aircraft. Communication lines used to connect FAA offices are being upgraded to improve data transfer speed. Remote offices will have system access through a dial-up service and the Internet. There will be an easy-to-use Windows and Windows-like interface. The Global Data Center is providing direct communication with airborne aircraft. When all four components are integrated, the AMIS will be replaced.

SAFETY THROUGH IMPROVED ATC TECHNOLOGY

Predictive Windshear System. The FAA and the industry have worked together to establish and certify the first transport category aircraft predictive windshear system. In November 1994, a supplemental type certificate (STC) was issued for the Boeing 737. STC's were later issued for the B727, B737, DC9, and DC10 aircraft. The new system provides the flightcrew with an advanced warning or advisory of a windshear condition by sampling the atmosphere ahead of the airplane. The predictive windshear system should greatly increase safety of flight.

The FAA has also developed a computer-based training program on windshear which is applicable to the entire aviation community. The program is available through the National Technical Information Service.

Wake Vortex Research with NASA. Wake vortices are tornado-like disturbances created as an aircraft passes through the atmosphere. This turbulence can pose a danger to smaller aircraft too close behind or below. The FAA and NASA are participating in a joint program to study the characteristics of wake vortices and to examine operational procedures for reducing vortex encounters within the terminal area. By gathering scientific data on vortex movement and decay, a tool can be developed to provide "adaptive pair" separations of aircraft which are time dependent rather than the current mileage-based standards. An additional benefit may be expanded capacity at airports which have limitations based on runway and traffic pattern configurations.



With smoke generators functioning, FAA's Boeing 727 makes a low pass over the airfield, clearly demonstrating the invisible wake vortices.

Traffic Alert and Airborne Collision Avoidance Systems (TCAS). Research to develop and improve airborne collision avoidance systems for all types of aircraft was undertaken during the past year in cooperation with the national and international aviation community. The International Civil Aviation Organization approved Standards and Recommended Practices for a collision avoidance system in 1995. Also, large commercial aircraft that were equipped with an earlier system received an enhanced version of the equipment known as change 6.04a which was developed with input from pilots and air traffic controllers.

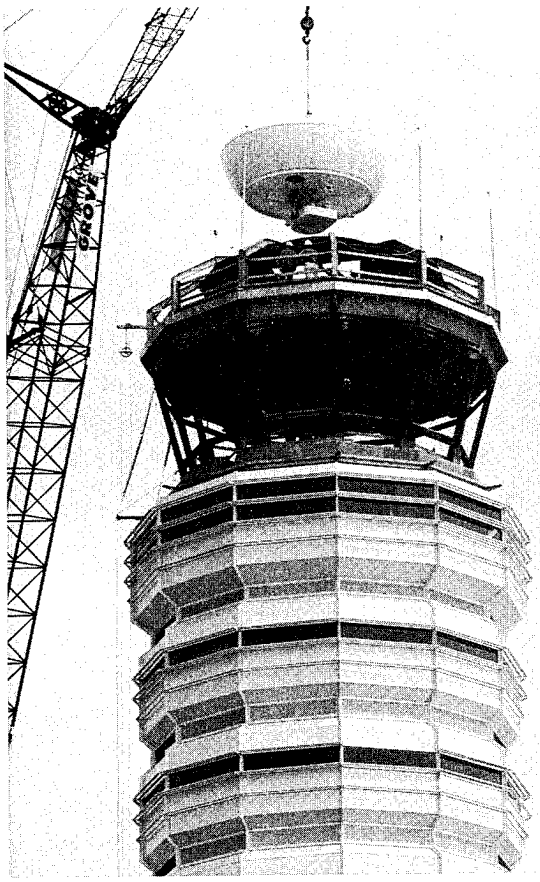
This enhanced equipment reduces the system alert rate by approximately one half. A lower cost system was approved and began flying on smaller commercial aircraft during the past year. The performance of these two systems was monitored as part of a congressionally required program to ease the transition of this equipment into the NAS. In addition to commercial uses, the development of a device for general aviation is being pursued.

Runway Incursion Action Plan. The 1995 Runway Incursion Action Plan, released in April 1995, laid out specific projects for the continuing improvement in airport safety, while dealing with the need to expand capacity and enhance ground operations. The plan outlines specific issues the FAA intends to address as it works to reduce surface errors at the Nation's more than 570 civil airports. These include reducing human error, improving ground communications, development and implementation of technologies to increase surface guidance and surveillance, as well as improved ground traffic management procedures and equipment.

Airport Surface Detection Equipment (ASDE-3) Commissionings. A principal component of the Runway Incursion Action Plan, the ASDE-3 provides radar surveillance of aircraft and airport service vehicles at high activity airports during periods of low visibility from rain or fog and during night operations. In FY 1995, 16 ASDE's were commissioned at 15 airports: Dallas/Fort Worth, Boston (Logan), St. Louis, Kansas City, Cleveland, Detroit, Portland, Atlanta, New York (JFK), Minneapolis, Denver, Baltimore, New Orleans, and Los Angeles (two systems). A remote ASDE was commissioned to serve Houston Intercontinental Airport, Houston, Texas. This is the first remote site in the Nation to be commissioned. In all, 40 ASDE's are on order; 29 have been delivered (7 in FY 1995); and 20 are commissioned.

San Francisco to Receive Nation's First Airport Movement Area Safety System (AMASS). AMASS is a state-of-the-art automated alerting system which augments the ASDE-3. AMASS tracks all ground operations, compares each movement, and automatically provides visual and audio alert of potential conflicts or even the slightest deviation in airport procedures. The deployment of the first AMASS for deployment/ evaluation is scheduled for May 1996 in San Francisco, California, with systemwide application in 1997.

Airport Surface Traffic Automation (ASTA). This highly sophisticated surface safety system will link ground sensor primary radar, the automated radar terminal system (ARTS), ASDE-3, AMASS, and differential GPS to provide positive identification of aircraft. Thirty-seven ASTA systems will be installed at major airports which have both ASDE-3 and AMASS.

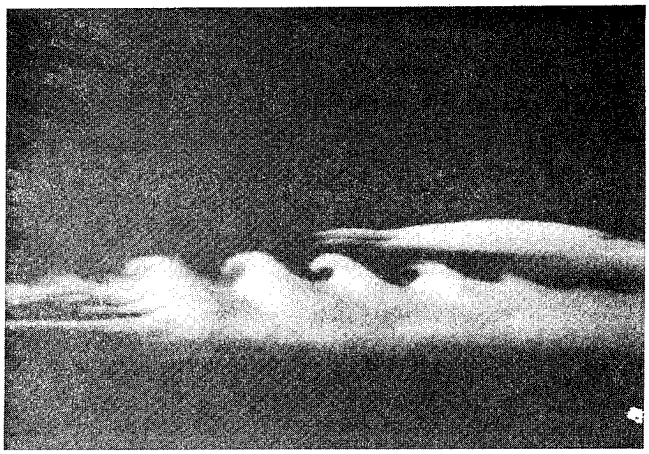


ASDE-3 lands atop new tower at Washington National.

Offshore Next Generation Weather Radar (NEXRAD) Deployment. As part of its broad weather service modernization program, the FAA is procuring four NEXRAD's for installation in Hawaii, seven in Alaska, and one in the Caribbean. Two of the four systems scheduled for Hawaii have been installed at Molokai and South Kauai. In Alaska, NEXRAD has been installed at Anchorage (June 1995), Fairbanks (August 1995), Bethel (November 1995), and King Salmon (September 1995). Installation is in various stages of completion at Middleton Island and Nome, Alaska.

The deployment of NEXRAD, offshore, is part of a joint program of the FAA, DOD, and the National Weather Service to establish a network of 116 new Doppler radar to provide for the timely detection and reporting of hazardous weather conditions.

Mountain-Induced Aeronautical Hazards. The FAA is exploring ways to increase en route and terminal airspace safety by investigating the effects of mountain-induced aeronautical hazards, such as mountain rotor turbulence, which are suspected to be



Waves associated with atmospheric windshear can cause turbulent regions at all flight levels. Often occurring in the vicinity of mountains, turbulence can exist without visible cloud formations to provide cues for pilots to avoid (Photograph © B. Martner).

significant factors in some weather-related accidents/incidents. The FAA is working with the National Oceanic and Atmospheric Administration (NOAA) to apply its research toward improved modeling and predictive techniques to avoid or minimize the dangers that may be encountered by aircraft from this type of hazard. Initial efforts are targeted at terminal airspace in mountainous regions, and follow-on work will also be applied to high-altitude mountain-induced turbulence. The project responds to specific NTSB recommendations on aeronautical hazards.

Terminal Doppler Weather Radar (TDWR). The TDWR provides warnings of hazardous thunderstorms, microbursts, and wind shear activity within a 50-nautical mile surveillance range. Separate ribbon displays alert ATCS's when windshear or microburst activity is detected in close proximity to departure and arrival paths. The TDWR can provide up to 20 minutes warning of hazardous weather, allowing air traffic controllers to disseminate this information immediately to pilots in the terminal area. The system also registers wind movement, rain, and gust front activity.

The FAA is procuring 47 TDWR systems (including two support systems) from the Raytheon Corporation. Eight systems have been commissioned, including one in FY 1994 and seven in FY 1995. The eight systems are located at Houston, Texas (IAH); Memphis, Tennessee (MEM); St. Louis, Missouri (STL); Kansas City, Missouri (MCI); Denver, Colorado (DIA); Wichita, Kansas (ICT); Charlotte, North Carolina (CLT), and Atlanta, Georgia (ATL). At the close of FY 1995, TDWR had been delivered to 30 sites. Deployment of all 47 systems is targeted for yearend 1996.

Integrated Terminal Weather System (ITWS). This system integrates and synthesizes all the terminal weather sensors to provide a unified set of safety and planning weather products. These products include information on terminal winds and storms, predictions of microbursts, and ceiling/visibility forecasts in a format that makes them immediately usable by ATC personnel without further meteorological interpretation. The ITWS will be deployed at the 45 airports which will have TDWR.

In FY 1995, the ITWS functional prototype in Orlando continued operations. Additional prototypes were installed and operated at the Memphis and Dallas-Ft. Worth TRACON facilities, successfully demonstrating the utility of ITWS products in a large TRACON environment. The completion of cost-benefit and other analyses allowed the program to proceed to full-scale development (FSD). A contract for FSD is anticipated to be awarded in late FY 1996 or early FY 1997.

Situational Awareness for Safety. In FY 1995, the FAA, in cooperation with aviation users, established a program to help implement the concept of situational awareness for safety (SAS). This concept includes the exchange and use of GPS position, terrain, weather, and other information, effectively displayed to pilots, dispatchers, and controllers, to create an environment promoting safer, more efficient, and free use of airspace. Development of SAS avionics by industry and use by pilots will contribute to implementation of the emerging free flight concept. SAS is not a capability envisioned exclusively for air carriers, but applies to small general aviation and air taxi aircraft as well as large air carrier aircraft.

Flight Information Services: The FAA and the MIT Lincoln Laboratory have developed a series of weather and aeronautical information services to be provided to commercial and private airspace users through data link. The graphical weather and traffic information services were evaluated jointly by the FAA and the Airline Owners and Pilots Association (AOPA) during 1995 at the Frederick, Maryland, Airport using the Mode-S sensor at Dulles

International Airport. These two services were shown to provide significant benefits to pilots by improving situational awareness of weather and traffic hazards.

SAFETY THROUGH EDUCATION, TRAINING, AND OUTREACH

Aviation Safety Hotline. The FAA provides a nationwide hotline where aviation workers and the general public can report safety issues and concerns. The toll-free number is 800/255-1111.

Line Service Training. This course was created to respond to Part 139 fuel handling training requirements. The training addressed all facets of line service: from parking the aircraft, servicing, towing, fueling, and fire extinguisher training. A companion film was produced by Combs-Gates in Denver, Colorado, which is used worldwide. The course has been handed over to the Oklahoma State Aeronautics Commission which is making the training available to fixed-based operators, statewide, through the Tulsa Technology Center.

Southwest Region Initiates Takeoff and Landing Seminars. This program offers 4 hours of ground school on aircraft performance, weight and balance, weather and pilot techniques, plus 2 hours of actual flying time with an assigned instructor. Takeoffs and landings are made at various airports that have environmental challenges (trees, grass, hills, uneven terrain, etc.) in order to give pilots experience on other than the concrete, sterile runways from which most pilots normally fly. On one airport alone, past history showed seven to nine accidents per year. Since this program has been in operation, only one accident has occurred.

Aviation Safety and System Enhancement Team (ASSET). The National Air Traffic Controllers Association (NATCA) and FAA joint venture to improve air traffic controller performance and reduce operational errors has completed its second year of operation in the Southwest Region. Emphasis has been placed on enhanced teamwork, involvement of all employees in each phase of error reduction and investigation, and empowerment of managers and supervisors to investigate and initiate appropriate actions. In FY 1995, a 9 percent reduction in operational errors was achieved at those facilities participating in the joint venture. The goal for FY 1996 is an additional 10 percent reduction.

Safety Room Established at Santa Monica Airport. The Los Angeles Flight Safety District Office and the City of Santa Monica Airport Commission have established a "safety room" in the Santa Monica Airport administration building. The facility is open to visitors and aviation safety counselors from 9 a.m. to 5 p.m.. The aim is to increase safety awareness among pilots and aviation maintenance technicians who are based at or visit the airport. Videos and safety pamphlets are available to all visitors.

Alaska Air Tour Safety. This past summer, the FAA Alaskan Region accelerated its efforts to monitor aviation activities supporting tourism in Alaska. Beginning in May and continuing through the middle of September, aviation safety inspectors conducted almost continuous surveillance of air tour operations around the busiest tourist attractions. In addition to Anchorage, Fairbanks, and Juneau (where Flight Standards District Offices are located), inspectors traveled to Ketchikan, Skagway, Haines, and Denali Park (Mount McKinley) to conduct safety inspections and surveillance. Inspectors also visited with pilots, mechanics, helpers, tour guides, and information center staff to learn more about the industry and identify ways the FAA can enhance and support flight safety.

Safety Video for Experimental Aircraft Users. Statistics show that approximately one fifth of all accidents involving experimental aircraft occur during the initial flights. The FAA and the Experimental Aircraft Association (EAA) produced a video "First Flight in Your Homebuilt," as an educational tool to raise safety awareness for experimental aircraft users. The video was released as part of the EAA's annual Fly-In at Oshkosh, Wisconsin.

FedWorld Bulletin Board System. The FAA now provides electronic information on a bulletin board system titled FedWorld to FAA users, as well as the general public. The information can be accessed through the Internet. The library on FedWorld is called "safety data" and includes service difficulty information, general aviation alerts, airman test information, and regulations. On January 1, 1996, the newest airworthiness directives became available in the safety data library without a fee. The Summary of Airworthiness Directives and the Summary of Supplemental Type Certificates are available for

purchase on diskettes through the National Technical Information Service (NTIS).

Aviation Medicine Educational Outreach. CAMI distributed 104,900 aviation safety brochures (Pilot Vision, Hypoxia, Seat Belts and Shoulder Harnesses, Spatial Disorientation, Over-the-Counter Medications and Flying, Smoke Effects, and Alcohol and Flying: A Deadly Combination) to the civil aviation community. Four Federal Air Surgeon's Medical Bulletins and 27 Aeromedical/Human Factors Research Technical Reports were published and made available to the AME's, the civil aviation community, and others interested in promoting aviation safety through medical knowledge.

CAMI developed and conducted a special course, "Medical Aspects of Aircraft Accident Investigation," designed to provide updated technical training for AAM personnel involved in the investigation of aircraft accidents and incidents in the United States. Accident investigators from the FAA's Office of Accident Investigation, the NTSB, Australia, Canada, Colombia, Costa Rica, El Salvador, Guatemala, Mexico, Panama, South Africa, Spain, and Venezuela also participated in this course.

Airman Education Programs. Fifty-four physiological training courses and 53 altitude chamber training flights were conducted at CAMI to provide mandatory training for FAA flight personnel (50 participants) and to promote aeromedical safety among the civil aviation pilot population (780 participants). In addition, 905 civil aviation pilots received physiological training at military facilities around the country, coordinated by CAMI through an FAA/USAF Agreement.

Six global survival training courses were conducted at CAMI for 50 FAA flight personnel. Thirty-one special aeromedical safety lectures were delivered to 1,170 civil aviation pilots in support of the National Aviation Safety Program.

CAMI's new portable general aviation spatial disorientation demonstrator (GASDD), the only one of its kind in the world, was used to provide spatial disorientation training to 2,460 FAA flight personnel and civil aviation pilots. This unique device produces a highly convincing demonstration of human limitations in maintaining spatial orientation during Instrument Flight Rules (IFR) conditions and teaches the importance of relying on cockpit instrumentation to fly safely under these conditions.

SAFETY THROUGH STRENGTHENED SECURITY MEASURES

Security Increased at U.S. Airports. In August 1995, based upon information provided by law enforcement and intelligence agencies. the FAA increased security measures at U.S. airports. Agency officials noted that, while there was no information to suggest that airlines or other modes of transportation were specifically threatened, it was reasonable and prudent to put additional measures in place to prevent or deter possible criminal or terrorist acts against the U.S. transportation system.

Aviation Security Contingency Plan. Tabletop testing of the agency's security contingency plan was conducted between March 1994 and July 1995. The FAA's Eastern Region, whose geographic jurisdiction includes major gateway airports serving the New York City area, participated in 13 exercises. The recent increase in security in August and other events provided a real-world exercise of the plan.

The year began with a serious challenge to civil aviation security. In January, Philippine authorities learned of a terrorist plot to put bombs aboard a number of U.S. flag carriers operating in the Pacific region. Close cooperation between the U.S. Government and concerned governments in the region, plus rapid implementation of special security measures by U.S. and some foreign air carriers, combined to enable the FAA and the aviation industry to keep disruption of air service to a minimum while ensuring the safety of the flying public.

In June, a threat by the so-called "Unabomber" to blow up an airliner out of Los Angeles International Airport led to the emergency implementation of additional security measures at a number of airports in California. Once again, the cooperation of various Government agencies, air carriers and airport officials, and the flying public made it possible to keep this part of the Nation's transportation network functioning in the face of a threat that might otherwise have been paralyzing.

Sensitive Security Information. On November 4, 1994, the FAA issued a proposal to strengthen the rules protecting information from release to unauthorized persons. The current rules do not require individuals to protect security sensitive information that is in their control and do not specify all sensitive security information that should be protected from public disclosure. This proposed rule would specify all

sensitive security information that must be protected and would require air carriers, airport operators, contract service air carriers, foreign air carriers, and individuals to be responsible for protecting it from disclosure to unauthorized persons.

Unescorted Access Privileges. On September 26, 1995 the FAA issued regulations requiring 10-year employment history background checks of individuals applying for positions that will authorize them to have, or to authorize others to have, unescorted access privileges to a secure area of a U.S. airport. The new rules will disqualify individuals convicted of certain crimes within the past decade.

Southwest Region Hosts Security Workshops. In FY 1995, the Houston Civil Aviation Security Field Office (IAH CASFO) designed and conducted a number of FAR and crisis management workshops involving civil aviation security for the airports and air carriers assigned to the Southwest Region. The team conducted 25 workshops over a 10-month period, reaching a total of 791 personnel at a cost of only $3.84 per attendee. In recognition of its efforts, the team was awarded the National Performance Review Hammer Award for Customer Service.

SAFETY THROUGH SYSTEM SECURITY TECHNOLOGY

Explosives Detection System (EDS) Certified. The FAA certified the first explosives detection system (EDS), the InVision CTX-5000, for detecting bulk explosives in checked baggage. Certification testing was performed by the Office of Aviation Research using a standard developed by the National Academy of Sciences. Cooperative research agreements were awarded for the operation and demonstration of the certified system at three international airports: San Francisco, Atlanta, and Manila. The FAA is the lead Federal agency for the development of explosives detection systems.

Protocol Developed for Trace Explosive Detection Systems. A protocol for certification testing of trace explosive detection systems to screen electronic items for explosives was developed by the Office of Aviation Research with support from industry and national laboratories. ICAO is validating the protocol for acceptance as an international standard.

Hardened Baggage Containers Developed to Protect Against Explosions. The aircraft hardening program completed development and testing of prototype hardened baggage containers. A grant was awarded to the Great Lakes Composite Consortium (GLCC) to have multiple composite material manufacturers build a limited quantity of hardened containers in accordance with FAA specifications. The FAA will deploy these containers in FY 1996 for operational testing with major air carrier cooperation and participation.

Universal Access System (UAS). The FAA has been working closely with the industry for over 2 years to identify technical standards, cost estimates, and an implementation plan for a universally acceptable airport security access system. An FAA Advisory Committee developed draft standards that will be tested at airports in Detroit and Miami in cooperation with Northwest and Delta Airlines.

Airport Security System Design. Testing of the operational integrated airport security system design implemented at the Baltimore-Washington International Airport was completed. An airport security conference was held in Atlantic City, New Jersey, to disseminate information to the aviation industry on the results of the airport security design installation and subsequent tests.

Baggage Matching Study. The FAA performed an industry study of the cost and benefit of implementing domestic positive passenger baggage matching. The Air Transport Association (ATA) and Regional Airline Association (RAA) coordinated the participation of eight major, four national, and four regional air carriers in providing operational data for modeling by SABRE Decision Technologies in support of the FAA study.

Aviation Security Human Factors. Initiatives in FY 1995 included:

Airport demonstration. The operational effectiveness of prototype systems for enhancing screener efficiency on conventional and computer tomography (CT) x-ray inspection systems began with an initial screener test. This test involved an explosive device detection baseline study examining the current capability of airport preboard screeners to detect improvised explosive devices (IED) in carry-on passenger baggage using black/white x-ray equipment. Screeners' detection performance was measured with a standardized computer-based test which presents

x-ray images of baggage, with or without embedded IED's. This effort also included the development of a test battery to predict eventual screener performance. The approach predicts performance by using two well-known, cognitive-perceptual tests: the hidden figures test and the hidden pattern test. These tests are now being given to those applying for screener positions. The test scores are correlated with eventual on-the-job performance as measured by threat image projection tests.

Profiling. Operational tests were completed of a self-report dupe checklist designed to identify passengers unknowingly carrying dangerous items. The principal investigative questions involved the extent to which followup interviewing is required and how much it would cost. The dupe checklist took, on average, 30 seconds to distribute and collect, per passenger, with about one additional minute for passengers requiring followup questioning. An automated passive domestic passenger profiling system was developed with the airline industry. This is being operationally tested to obtain cost and operational effect data for implementation alternatives.

Checkpoint screening. Screener performance using hand-held metal detectors was evaluated in an operational setting. Issues addressed included wand detection performance, wanding patterns and procedures, screener body postures and wand ergonomics, and wand design features. Collected data are being used to improve the wand training program. In help improve screeners' capabilities to detect various simulated improvised explosive devices and their components, the Eastern Region conducted evaluations with modular bomb sets. The screeners were provided immediate feedback, which will serve to increase their awareness of more sophisticated devices.

A unique training program was developed to improve the interpersonal skills of baggage screening personnel and their supervisors. The screener training workshop included communication skills and conflict resolution. A workshop for supervisors included training in diffusing volatile situations and supervisor skills. Computer-based training systems were operationally evaluated for their ability to improve screener detection of IED in x-ray images. Systems tested were the safe passage international, safe passage 40, and the EG&G astrophysics linescan testing and training system.

SYSTEM CAPACITY

Ensure adequate and efficient capacity for all aviation users

INITIATIVES THAT TARGET TODAY'S CAPACITY NEEDS

Production of Display Channel Complex Rehost (DCCR) Begins. A contract was awarded in late August 1995 to Loral Corporation to begin production and installation of the DCCR. The new equipment will replace aging display channel complex (DCC) computers at FAA ARTCC's in Chicago, Dallas-Fort Worth, Washington, Cleveland, and New York. The DCCR will be operational at the Chicago Center in October 1997. The sites will be operational for at least 16 months prior to delivery of the display system replacement (DSR), the automated ATC workstation of the future. The DCCR will replace IBM 9020E computers that create the displays on the air traffic controllers' radar screens. The 9020E's have been the primary radar data processing computers at the five sites since the early 1970's.

Managed Arrival Reservoir Program (MAR). During 1995, this program, which was introduced at four major airports in January (Boston, Philadelphia, St. Louis, and San Francisco), was successfully expanded to eight by July (Atlanta, Dallas/Fort Worth, Dulles, and Miami). The program, designed to make more efficient use of existing capacity, replaces the old procedure which keeps planes waiting on the ground at departure airports until slots open at the destination. "Managed arrival" permits aircraft to hold "close in" to destination airports for up to 15 minutes until a slot becomes available. At San Francisco, for example, the south flow had handled about 28 aircraft an hour under the old procedure. With the reservoir, as many as five more planes can be fit in during the same period. The program has eliminated en route restrictions almost completely at Boston and Philadelphia. The FAA's goal is to expand MAR to all airports.

FAA Study Addresses Airspace Capacity and Delays. The Aviation Capacity Enhancement Plan, released in February 1995, lays out a series of strategies aimed at improving national airspace capacity and combating projected delays. According to the report, the 50 busiest airports in the United States handle more than 80 percent of the Nation's air traffic. Many of these airports are

already congested, and flight delays are expected to grow unless capacity improvements are made. At the close of FY 1995, the FAA's capacity design program had studied 42 of the top 50 airports, identifying, assessing, and recommending actions to improve efficiency and reduce delays. Five of the 42 studies were completed in FY 1995: Phase I studies at Dallas/Fort Worth and Las Vegas Airports; the Boeing 777 Folding Wing Aircraft study at La Guardia Airport; a taxiway design study at Charlotte, North Carolina; and a study update for Atlanta Hartsfield International Airport. A number of single-issue studies and updated reviews were also initiated.

Precision Runway Monitor (PRM). PRM is a high update rate radar with computer predictive displays which allow controllers to monitor aircraft on simultaneous independent IFR approaches to parallel runways spaced less than 4,300 feet apart. This capability allows certain airports to increase capacity, reduce delays, and save fuel during periods of poor visibility. Five production systems have completed factory testing.

The first production system was delivered to Minneapolis in January 1995, and site testing has been completed. This system is expected to be commissioned in 1996. Other airports under consideration to receive PRM include Atlanta Hartsfield, JFK International, Philadelphia, Pittsburgh, and St. Louis. Further research is underway to reduce the parallel runway separation standard to 3000 feet with the use of a PRM. A demonstration of the feasibility of a low-cost replacement technology for PRM will be conducted at Atlanta in FY 1996.

Controllers to Test Descent Advisor at Denver International Airport. The descent advisor is a new ATC tool which provides time and location data to assist controllers in the efficient sequencing and separation of flights in en route airspace as they near their destination airport. The new software is a component of the center-TRACON automation system (CTAS) being developed by the FAA and NASA to improve safety, capacity, and efficiency as aircraft transition from en route to terminal airspace. The FAA began testing the descent advisory at Denver International Airport in November 1995.

Voice Switching and Control Systems (VSCS) Commissioned. The VSCS, developed for the FAA by the Harris Corporation of Melbourne, Florida, provides high-speed message transfer between pilots and controllers at the FAA's 20 contiguous ARTCC's and the Anchorage center. The system replaces 1950's technology with modern digital equipment and fiber optics that provide both high reliability and ease of operation. In FY 1995, VSCS was put into service at three ARTCC's: Seattle, Washington; Salt Lake City, Utah; and Anchorage, Alaska. A fourth system was commissioned at the ARTCC in Longmont, Colorado, on October 12, 1995. The last of the new communication systems is scheduled to go into service at the Jacksonville, Florida, Center in February 1997.

Contract for Enhanced Terminal Voice System Awarded. Denro, Inc., of Gaithersburg, Maryland, was awarded a contract in August 1995 to upgrade the communications capability at air traffic control towers (ATCT) and approach and departure control facilities. The $69 million contract to build and install the enhanced terminal voice switch (ETVS) represents a 30 percent savings over the system's originally projected costs. ETVS will replace aging voice communication systems with a highly reliable and easy to maintain system using state-of-the-art, off-the-shelf components. The system will provide the same benefits to FAA tower and terminal facilities that the VSCS gives to the en route centers.

The ETVS contract, a joint FAA/DOD procurement, calls for production, testing, installation, and continuing maintenance of an automated voice communication system that will be placed in 336 FAA and DOD air traffic terminal operations beginning in 1996. A maximum of 417 systems can be purchased under the contract. Under the terms of the contract, Denro will also provide technical support and training of both air traffic controllers and maintenance personnel.

Operation of National Airspace Data Interchange Network (NADIN II) Inaugurated. Commissioned on March 31, this high-speed data communications system enhances the controller's ability to pass information to pilots. NADIN II, a major building block of the FAA's ATC modernization program, will increase the level of safety and efficiency in the system by providing rapid information sharing among the FAA's 20 contiguous ARTCC's.

When combined with the airborne data link system, vital flight and weather information can be delivered to aircraft almost as it is being generated by the service provider. For example, when the National Weather Center in Suitland, Maryland, issues a

weather advisory for anywhere in the United States, the appropriate ARTCC will receive the data almost instantly for relay to pilots. In addition, NADIN II enhances the efficiency of system maintenance by using error-checking routines that ensure the completion of data transmissions and by allowing maintenance and repair work to be performed while the system continues to operate. It is expected to save the FAA between $8 and $10 million in annual telecommunications costs.

Leased Interfacility NAS Communications System (LINCS). In March 1992, the FAA awarded a contract to MCI Telecommunications Corporation to provide leased telecommunications services via the LINCS network. Following contract award, MCI began construction of a state-of-the-art telecommunications network containing significant diversity and serving approximately 4,000 locations. The installation of the infrastructure and all nodes was completed on schedule and within budget. Approximately 82 percent of the channels have been transitioned. The remaining channels are expected to be completed in FY 1996.

The performance of the LINCS network has met design expectations and improved service. This has been demonstrated by minimum loss of service during earthquakes, hurricanes, and major cable cuts. Mean time between outages (MTBO) has increased, and service availability has improved.

The LINCS contract was structured so that new technology can be incorporated in the network. Currently efforts are underway to implement direct digital connectivity (DDC) where feasible. The use of DDC will reduce the number of analog to digital conversions required.

Satellite-based Telecommunications Network in Alaska. Now in its second year of implementation, the ANICS (Alaskan NAS Inter-Facility Communications System) project establishes a fully diverse satellite-based FAA-owned and/or leased private line telecommunications network within the Alaskan Region. The system provides voice, control, and communications via satellite for ATC, as well as flight service and weather functions. The system will eliminate the need for leased telecommunications service with a potential long-term savings of $200,000 per year per site. Each remote site costs around $1 million.

As of October 1995, five sites (McGrath, Anchorage, Juneau, Biorka, and Kenai) are operating with NAS operational circuits cut over. The contractor is working to get sites ready for acceptance by the FAA so additional circuits can be cut over at the planned rate of one site per week. Four hub earth stations, 29 remote sites, and the network control center have been ordered. Three hubs and two remote sites have been accepted, and the remaining 28 sites are in various stages of completion.

Capacity Enhancements in the Southern Region. The FAA's Southern Region took significant steps to make more efficient use of the airspace:

Static restrictions for departures were eliminated at Tampa, Jacksonville, Orlando, and Raleigh. Static arrival restrictions were eliminated at Memphis and Cincinnati.

The use of visual separation below flight level 180 is now standard practice at all ARTCC's in the Southern Region.

The Charlotte and Greensboro ATCT's, working with Atlanta, Jacksonville, and Washington ARTCC's, redesigned the approach control airspace for both facilities to make more efficient use of the airspace.

The Memphis ATCT developed a Quality Through Partnership Work Group composed of representatives from the NATCA, FedEx, and facility management to develop and implement procedures to enhance customer service. Improvements include an additional position on the midnight shift to eliminate frequency congestion and a clearance delivery program that does not require the pilot to obtain verbal departure clearances.

Louisville, Kentucky, and San Juan, Puerto Rico, ATC Facilities Upgraded. The total traffic count for air traffic facilities in the Southern Region increased by 2.2 percent over FY 1994. Two facilities were upgraded to accommodate the heavier volume. San Juan, Puerto Rico, CERAP was raised to Level V and Louisville (Standiford Field), Kentucky, ATCT was raised to Level IV.

Runway Visual Range (RVR). The FAA is installing a new generation RVR that will support Category I, II, and III A/B operations using any precision landing system. In FY 1995, 34 systems were delivered and 10 commissioned. The RVR monitors visibility on the runway, as seen from the

runway level. It also enables airports to add capacity on nonprecision runways.

Mark-20 Instrument Landing System (ILS) Deliveries Underway. The FAA commissioned the first MK-20 ILS at Kansas City International Airport, runway 1R, in January 1995. The MK-20 ILS will fulfill requirements for new and replacement equipment needed to sustain all-weather precision landing capability until global positioning landing systems can be fully implemented and ILS withdrawn. This modern design ILS equipment has integral remote maintenance monitoring for greater workforce productivity. The FAA has contracted with Wilcox Electric, Inc., Kansas City, Missouri, for 173 MK-20's. Nationwide, 42 systems were delivered in FY 1995, 36 have been installed, and 15 commissioned. Systems are currently being delivered at a rate of five per month.

Installations of the Automated Weather Observing System (AWOS)/Automated Surface Observing System (ASOS) in Alaska. Installations are underway at three sites: Buckland, Emmonak, and Golovin. When all sites are commissioned, Alaska will have 49 AWOS's and 29 ASOS's.

Consolidation of the Southern California TRACON. Consolidation of five TRACON facilities into Southern California TRACON was completed in September 1995 with the relocation of the final facility, San Diego TRACON. The new facility, located in San Diego provides terminal radar ATC services for all airports along the coastal area of Southern California to the Mexican Border. The consolidated TRACON will allow the management of air traffic growth in Southern California. The first facility, Los Angeles TRACON, was consolidated in February 1994, followed by Coast (El Toro), Burbank, Ontario, and San Diego. Southern California TRACON is the first of several major consolidations of TRACON's planned throughout the country.

Progress on Dallas/Fort Worth Metroplex Air Traffic System Plan. Progress continues in implementing the Dallas/Fort Worth (D/FW) Metroplex Air Traffic System Plan. Two airport surveillance radar-9 (ASR-9) systems were commissioned in April and June of this year. Construction of the D/FW ASR-9 building was also completed in June, and the installation of equipment began immediately. These three ASR-9's, in conjunction with the D/FW East ASR-9, will provide radar coverage for the expanded terminal area.

The expanded TRACON facility was finished in July, and the installation of telecommunication, automation, and supporting systems is well underway.

The Metroplex Program requires a major modification to the airspace and procedures within a 150 nautical-mile radius of the airport. This includes (1) realignment of 24 low altitude airways, (2) one new high altitude jet route and the realignment of three existing jet routes, (3) modification of 121 standard instrument approach procedures, (4) incorporation of approximately 300 new intersections and the cancellation of 125 existing intersections, in addition to numerous other changes. These procedures have been designed, and documentation is in its final stages. Flight inspection/validation is also in progress.

New Potomac Metroplex. The FAA has had a program underway since 1993 to consolidate the approach controls serving Washington National, Baltimore-Washington International, Dulles International, and Andrews Air Force Base into a single metroplex control facility. The design team is in the process of selecting a site, which will be followed by environmental studies. The facility, which will house 400 employees, including 250 controllers, is scheduled for completion in 1999. The estimated cost of the metroplex is $145 million. The consolidation has been sought by the FAA, airline pilots, and operators as a way to reduce delays, enhance safety, and prepare for the growth in air traffic activity expected within the next decade.

New Standard Instrument Departure at Dallas/Fort Worth International Airport. The "Joe Poole" Standard Instrument Departure (SID) was published on September 14, 1995. The new procedure provides an additional southerly departure route out of the D/FW metro area, raising the number of available routes from three to four. In contrast to a radar vector SID, the Joe Poole SID is based on pilot navigation and was developed through the collaboration of employees from the Fort Worth ARTCC and D/FW TRACON.

Airport Surveillance Radar, Model 9 (ASR-9) Commissionings. The ASR provides separation service within a 50-mile radius of the airport terminal area. The ASR-9 is the first model with the capability

MAJOR EQUIPMENT COMMISSIONED
From Oct. 1, 1994, Thru Sept. 30, 1995

Facility Type	Equipment Commissioned FY-94	FY-95
Air Route Surveillance Radar - FAA and Military (ARSR)	1	1
Automated Radar Terminal System (ARTS)	15	10
Airport Surface Detection Equipment (ASDE)	1	16
Automated Surface Observing System (ASOS)	21	24
Airport Surveillance Radar-FAA and Military (ASR)	31	29
Airport Traffic Control Tower (ATCT)	11	23
Airport Weather and Information System (AWIS)		
Automated Weather Observing System (AWOS)	43	16
Bright Radar indicator Terminal Equipment (BRITE)	37	35
Distance Measuring Equipment (DME)	20	30
Data Multiplexer (DMUX)	66	78
Flight Data Input/Output Remote (FDIOR)	26	35
Flight Service Data Processing System (FSDPS)	4	
High Capacity Voice Recorders	9	
Integrated Communications Switching System (ICSS)	30	45
Instrument Landing System (ILS)	22	15
Low Level Wind Shear Alert System (LLWAS)		3
Long-Range Navigation C Monitor (LRANCM)	8	4
Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR)	33	36
Mode select secondary radar with data link (Mode S)	33	40
Maintenance Processing System (MPS)	5	2
NAS data interchange network (NADIN)		1
Non-directional Beacon (NDB)	15	3
Precision Approach Path Indicator (PAPI)	55	40
Remote Center Air/Ground Communications Facility (RCAG)	14	16
Radio Communications Link Repeater (RCLR)	8	15
Radio Communications Link Terminal (RCLT)	25	45
Remote Communications Outlet (RCO)	29	42
Runway End Identification Lights (REIL)	20	24
Radar Microwave Link Repeater (RMLR)		
Remote Readout Hygrothermometers (RRH)	2	2
Remote Transmitter/Receiver (RTR)	46	40
Runway Visual Range (RVR)	3	40
Small Tower Voice Switch	36	
Television Microwave Link Transmitter (TMLT)	5	3
Terminal Doppler Weather Radar (TDWR)	1	7
Terminal Radar Approach Control (TRACON)	2	2
Visual Approach Slope Indicator (VASI)	6	6
VHF Omnidirectional Range (VOR)	6	12
VHF Omnidirectional Range Test (VOT)	9	12
Voice Switching and Control System (VSCS)		3
Total	698	755

to present weather information directly on the controller's screen, without obscuring the aircraft target. In FY 1995, ASR-9 was commissioned at Greensboro, North Carolina; Knoxville, Tennessee; Covington and Louisville (Standiford), Kentucky; Atlanta, Georgia; Daytona Beach, Florida; and 14 other locations. On a nationwide basis, 134 ASR-9's have been ordered, 124 delivered, and 112 commissioned (20 in FY 1995).

Roswell, New Mexico, Begins ASR-9 Construction. A $577,000 contract was awarded in March 1995 to the Larson Corporation of Tucson, Arizona, for construction of the Roswell ASR-9. The work began in September 1995, and the ASR should be operational within one year. Data will be remoted to the Albuquerque ARTCC until the Roswell TRACON is commissioned, then the data will be used by both facilities.

Albuquerque Tests New ASR-9 Windshear Processor. The Albuquerque ATCT is working with MIT-Lincoln Laboratories in testing a windshear processor, an addition to the ASR-9 that provides microburst detection.

Newark International Airport Commissions ILS. An ILS on runway-11, long been sought by the airlines to offload small aircraft from the major runways, was placed in service March 1995, 2 months ahead of the planned commissioning date.

CAPACITY THROUGH ATC FACILITY IMPROVEMENTS

New Tower at Los Angeles International Airport. Construction of the new Los Angeles ATCT is 99 percent complete, with commissioning planned for March 1996. The tower, located near the Theme Building on Los Angeles International Airport, replaces a tower constructed in the 1950's. The new tower meets all the latest California earthquake standards and has almost three times the space of the existing tower. Its 252-foot elevation will afford controllers a bird's eye view of the airport.

Louisiana Airports Get New ATCT's and TRACON. On May 7, 1995, the FAA commissioned ATCT and TRACON facilities at the New Orleans (Moisant) International Airport. The new facilities contain the latest solid-state systems, including a rapid deployment voice switch (RDVS), automated radar tracking system IIIA (ARTS IIIA), digital-bright radar indicator tower equipment (D-BRITE), and ASR-9. Since the commissioning of the facility, ASDE-III was added and commissioned on September 29, 1995. The agency also commissioned a new ATCT in Monroe, Louisiana.

New TRACON's at Roswell, New Mexico; Buffalo, New York; and Norfolk, Virginia. A $4,617,000 contract for construction of the Roswell ATCT and TRACON was awarded to MW Builders of Temple, Texas, in March 1995. Construction on the building began in September 1995 and is expected to be completed in December 1996. Electronic installation is to start September 1996 and be completed June 1997. Service is to be available September 1997. The new TRACON at Buffalo International Airport was commissioned in September 1994. The Norfolk International Airport TRACON was commissioned in January 1995.

Modernization of the Anchorage ARTCC. A major expansion of the ARTCC continued through FY 1995. Equipment installations completed during the year included en route automated radar tracking system (Micro-EARTS), VSCS, large facility demark system (LFDS), and ANICS. Engineering was completed, and a construction contract awarded fora three-bay expansion of the Center's technical/operations building. This addition will house the equipment required for the oceanic automation systems.

Flight Service Station (FSS) Modernization Completed. The final automated flight service station (AFSS) was commissioned on February 15, 1995, at Honolulu International Airport. The old flight service station had been located in the Diamond Head Crater since its opening in the late 1950's.

In 1983, the FAA began consolidating its 50-year-old network of 318 FSS's into 61 automated facilities that offer pilots simplified flight plan filing, improved access to weather, and other critical information. By the close of FY 1995, 286 FSS's had been consolidated successfully into the 61 new automated facilities, 31 designated as auxiliary FSS's, and one at Tri-City, Tennessee, will remain open until further notice. With the exception of the St. Louis AFSS, which was damaged by the 1993 floods, all 61 AFSS's are commissioned and operating. These highly modern facilities can handle the projected increases in demand for flight services economically and efficiently. Examples of consolidations completed in FY 1995 include:

California. Western-Pacific completed its regional FSS consolidations with the remoting of three California FSS's to AFSS's. Salinas was remoted to the Oakland AFSS, while both Stockton and Red Bluff were consolidated into Rancho Murieta AFSS.

New Mexico. Deming, Tucumcari, and Truth or Consequences, New Mexico, FSS's were consolidated into the Albuquerque, New Mexico, AFSS on March 31, 1995. The Carlsbad and Roswell FSS's were consolidated into the Albuquerque AFSS on June 30, 1995. A contract was awarded to provide weather observations at both Gallup and Las Vegas to support the FSS consolidation program.

Eastern Region. The last seven FSS's in the Eastern Region were consolidated into an AFSS on September 30, 1995.

AFSS's in Oklahoma, Texas, and Louisiana to Receive Upgraded Weather Products. A contract to provide NEXRAD products to the AFSS's at McAlester, Oklahoma; Montgomery County, Texas; and DeRidder, Louisiana; was awarded to Kavouras, Inc. This will enable these three facilities to provide weather radar information from the latest National Weather Service Doppler weather radar. NEXRAD products for the remainder of Southwest Region AFSS's will be available early next year.

Pilot Data Storage (PDS) Program Eliminates Time-Consuming Routine Practices. Personnel at the Fort Worth AFSS developed a pilot data storage (PDS) program to enhance customer services and optimize resources. The FAA requires background information prior to providing a weather brief in order to tailor the brief to the pilot's needs. Asking the same questions (name, home base, telephone number) each time a pilot calls is time-consuming for the controller and sometimes inconvenient for the pilots. The new program stores this static information in the computer with the prestored flight plans. This program will be operational throughout the Southwest Region by the end of the year.

FAA Collects Weather Data for National Weather Service. The FAA received 24 weather observer contracts from the National Weather Service and assigned a full-time NAS implementation support contractor (NISC) to manage them.

Facility Modernization in Southern Region. The Southern Region automated the International Flight Service Station in San Juan, Puerto Rico. Also, the Southern Region successfully contracted out Level I towers serving Gainesville, Key West, and St. Petersburg, Florida; Jackson, Mississippi; and Kinston, North Carolina.

MAINTAINING SYSTEM EFFICIENCY

New Backup Power Systems Ordered. A 5-year contract for up to $87 million was awarded to the Kohler Company of Kohler, Wisconsin, to purchase diesel and propane engine generators for emergency backup power at large and small ATC facilities throughout the United States. The new generators will replace systems installed in the 1950's, 60's, and early 70's which have become unreliable or difficult to maintain. Deliveries are to begin in January 1996.

Air Traffic Control System Command Center Adds New Office. Now in full operation at its new location in Herndon, Virginia, the ATC System Command Center tracks, monitors, and manages the flow of more than 150,000 flights a day. It is staffed around-the-clock to provide controllers with a near real-time picture of traffic in the U.S. system. In FY 1995, a Procedures and International Operations Office was added to address the Command Center's role in international traffic flow management.

Remote Maintenance Monitoring System (RMMS) Upgraded. Ten maintenance processor systems (MPS) were upgraded to state-of-the-art capability, under contract with Tandem Computers, Inc. A technology enhancement contract modification was completed in September 1995 and 29 state-of-the-art Tandem RISC-based K2000 computer platform upgrades were procured. Monitor and control software upgrades were also completed in FY 1995 to implement remote maintenance monitoring for six more NAS facility types, bringing the total number to sixteen facility types.

FAA Logistics Center (AML). Located in Oklahoma City, this facility supports more than 54,000 systems and 50 FAA aircraft. It has 104 international agreements with 50 countries and 74 interagency agreements with seven Federal and 10 state agencies. The Center manages an inventory of over 105,000 line items with an estimated annual value of $500 million on 12 acres of automated warehouse space, 5 acres of off-site warehouse space, and 17 acres of outside storage. In FY 1995, AML shipped over 270,000 items valued at more than $208 million to support U.S. NAS facilities and equipment.

A mobile air traffic control tower is delivered to Cyril E. King Airport on St. Thomas after hurricane Marilyn rendered the existing tower inoperable.

Hurricane Marilyn Recovery Efforts. The FAA Logistics Center in Oklahoma shipped three large engine generators, navigational aids, a portable ATCT, other items from its inventory, and more than $10,000 worth of supplies and equipment purchased from local vendors to support recovery efforts from Hurricane Marilyn. The Center provides similar support to keep airport and air traffic control facilities operating following any major disaster.

CAPACITY THROUGH ADVANCED TECHNOLOGY

ATC Automation Moves Ahead. In June 1994, after intensive analysis by independent experts, Administrator Hinson ordered a major overhaul of the advanced automation system (AAS). The AAS program, begun in the early 1980's, had suffered from a history of cost overruns and delays. Two components of the program, the area control computer complex and the terminal advanced automation system (TAAS) were cancelled. A third component, the tower control computer complex (TCCC) was scaled back. A fourth major element, the initial sector suite, needed further analysis to determine whether it could be operated and maintained. It was also decided that, while this review was taking place, the Loral Corporation would continue to document the overall architecture and computer code. (Loral had acquired the contract when it bought IBM Corporation's Federal Systems Division in early 1994.)

In April 1995, the FAA decided to go ahead with the development of the computerized work stations and awarded a revised contract to Loral. The new "display system replacement" contract calls for Loral to design and build about 3,000 state-of-the-art work stations for the agency's 21 ARTCC's. Loral was also given a separate $57 million contract to develop ATC systems for local airport towers.

DSR Passes Critical Test. A critical design review (CDR) completed on September 13, 1995, found that the agency's program to replace aging controller work stations at en route centers is on track for both schedule and costs. The CDR was a thorough and comprehensive review that took a hard look at the contractor's design of the DSR system. It compared the design to the specifications outlined by the FAA in the initial DSR contract. The review determined that, at its current stage, DSR development is progressing as expected and that the agency's requirements are being met. The program is ready to move to the next stage, which is to begin testing the DSR in a simulated ATC environment. The first DSR is scheduled to be fully operational in Seattle in October 1998.

Standard Terminal Automation Replacement System (STARS) Procurement Underway. "STARS" is a joint FAA/DOD program to replace aging hardware and software at terminal approach control facilities. The new automation infrastructure will be fully digital, capable of tracking all aircraft within a defined airspace. Plans call for STARS to be installed at nine FAA metroplex control facilities, 154 FAA and 42 DOD TRACON's. An additional eight systems will be purchased to provide training and operational support.

The FAA's streamlined acquisition process for STARS, presented at a bidder's conference in December 1994, included a limited competition to qualified bidders. Minimum qualification criteria published in March 1995 drew responses from 11 companies. In July 1995, the FAA determined that seven companies were qualified to compete for award of the STARS contract. Four of the companies later declined to compete.

Automation Support Contract Awarded in New Streamlined Process. A 7-year, $231 million contract for technical assistance in the development

of the next generation of air traffic automation systems was awarded to TRW Government Services, Inc., of McLean, Virginia, in June 1995. Under the technical assistance contract, TRW will provide up to 4.5 million hours of engineering and related services to help the FAA deliver the next generation of ATC automation. TRW's responsibilities include independent hardware and software test monitoring; quality assurance; site surveys; human factors application; and ensuring that all the FAA's requirements are met in the development of advanced en route, terminal, tower, traffic management, and oceanic ATC; communications; and maintenance systems that will control U.S. air traffic in the next century.

The contract was awarded using a streamlined procurement process that allowed the FAA to reduce by half the time normally required for acquisitions of comparable size. The acquisition process, a pilot program of the FAA and the Office of Federal Procurement Policy, included evaluating potential bidders prior to issuing the request for proposals (RFP) to determine their ability to successfully complete the terms of the contract and conducting one-on-one interviews with those who qualified, to fine-tune the RFP prior to its being issued. Also, the RFP was posted electronically on the Internet, another first for FAA acquisitions.

Global Positioning System (GPS). The GPS is a constellation of 24 satellites, developed and operated by DOD, that enable aircraft equipped with certified GPS receivers to triangulate their position accurately anywhere on earth. The constellation was declared operational in December 1993. Since that time, the FAA has moved swiftly to make the transition to this new technology.

The United States offered, and the International Civil Aviation Authority accepted, GPS as a component of the global navigation satellite system envisioned by the Future Air Navigation System Committee.

For the past 2 years, basic GPS has been available as a supplemental means of navigation in the United States. It was approved by Administrator Hinson for primary navigation on oceanic and remote routes in December 1994.

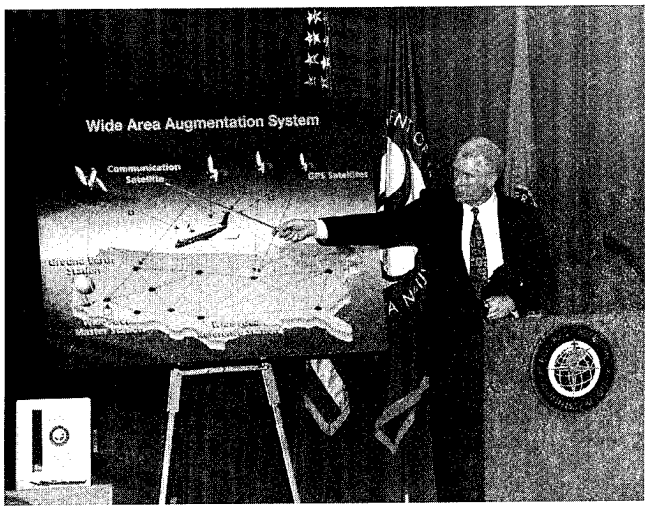
More than 3,650 U.S. airports now have certified nonprecision GPS approaches, 411 nonprecision, stand-alone procedures were developed during FY 1995 (93 charted in Alaska), and one-half or more have been flight checked. The agency's goal is to develop 500 stand-alone procedures each year. The FAA is equipping its entire flight inspection fleet with GPS receivers to support this objective.

To achieve the full benefits of the positioning information provided by GPS, the basic service must be augmented by information from a network of ground reference stations supported by land- and space-based communication systems. The FAA is pursuing two augmentation systems.

1) Wide Area Augmentation System (WAAS). A $475 million contract was awarded to a consortium led by Wilcox Electric, teamed with Hughes Aircraft and TRW, for the development of WAAS to enhance the integrity and availability of GPS signals. The contract calls for the development and fielding of a network of ground stations across the United States. The ground stations will receive, analyze, and refine signals from the GPS satellites and transmit the information via communication satellites to all aircraft flying within U.S. airspace. The WAAS ground stations will be located at approximately 35 ATC facilities across the country.

GPS, enhanced by WAAS, will support primary navigation in all phases of flight down through Category 1 precision. The WAAS, for example, will improve the accuracy of the basic GPS signal to within 7 meters. The FAA expects to begin using WAAS for GPS Category I precision approaches in 1998.

The new system will improve airline reliability, increase flight safety, and lower operating costs by



Joseph Dorfler, former GPS Product team leader, explains how the Wide Area Augmentation System works.

reducing fuel consumption and flight time. Air travel time will be shorter, because planes will be able to fly more direct routes to their destinations. It will give the public better access to airports: today, less than 1,000 airports permit approaches in low-visibility conditions; GPS and WAAS will permit instrument approaches to more than 8,000 airports. Delays will be reduced, because GPS/WAAS will allow more airplanes to occupy a given airspace without increased risk. And, taxpayers will see significant Government savings, as many older, hard-to-maintain ground systems are decommissioned.

2) Local Area Augmentation System. After 3 years of study and the completion of more than 400 autolands. the FAA has demonstrated, conclusively, that differential GPS can be used for Category II and III precision approaches. Local area systems are being developed to augment the basic signal to meet these more demanding requirements. This capability is expected to be available at U.S. airports by 2005. In a related matter, the International Civil Aviation Organization agreed to devise a transition plan which accommodates ILS, MLS, and satellite-based precision approach and landing systems.

WAAS Criteria Under Development. The FAA's Office of Aviation System Standards (AVN) is evaluating the Terminal Instrument Procedures (TERPS) engineering standard for the WAAS and working with outside agencies to establish flight inspection criteria and requirements. Also, the GPS receivers being installed on the agency's fleet of 18 Beech 300 aircraft will be modified to support WAAS requirements. The agency's objective is to have modified WAAS flight inspection aircraft and flight inspection criteria and procedures in place when the WAAS becomes available.

GPS "Squitter." This initiative combines two relatively mature technologies to greatly extend the availability of real-time aircraft surveillance information. GPS is used to pinpoint an aircraft position in real-time, and Mode S is used to periodically broadcast (squitter) this information to both ground and airborne users within line of sight.

During FY-95, the FAA sponsored a program to demonstrate Mode S "squitter" surveillance capability in low altitude areas in the Gulf of Mexico. Three aircraft were equipped with global navigation equipment (GPS or LORAN), a modified Bendix/Collins KT-70 Mode S transponder, and an interface unit. The aircraft "squittered" their positions once per second. The "squittered" information was received by ground interrogator/receiver units (GIRU) and relayed back to a central computer located on-shore for display via microwave or satellite link. The demonstration verified the Mode S squitter surveillance capability, using prototype commercial off-the-shelf equipment in typical operational aircraft.

A second demonstration is planned to continue the evolution of automatic dependent surveillance capabilities in the Gulf. The demonstration will include two-way data link capability, expanded surveillance coverage, and cockpit display-of traffic information.

GPS Electromagnetic Compatibility (EMC). The first phase of a study to determine potential interference sources to GPS civil aviation operations was completed in FY 1995. The study phase addressed the most severe potential threats to GPS, including (1) VHF and UHF television harmonic interference, (2) on-board VHF communication interference, (3) "worm hole" analysis, detection, and isolation; and (4) GPS receiver susceptibility and failure mode. A number of conclusions supported the view that there are no large radio frequency interference obstacles to the implementation of GPS-based navigation services.

Aeronautical Data Link. Today's ATC system depends heavily on two-way radio communications between the pilot and the controller. With increased air traffic volume, however, the radio frequency channels are often overburdened. Moreover, the constant stream of voice messages can lead to error through misinterpretation. Aeronautical data link will replace or supplement many of today's routine voice communications with digital messages. It will support the future global air traffic management system and is a key enabling technology for the "free flight" operational concept. *See Industry Vitality.*

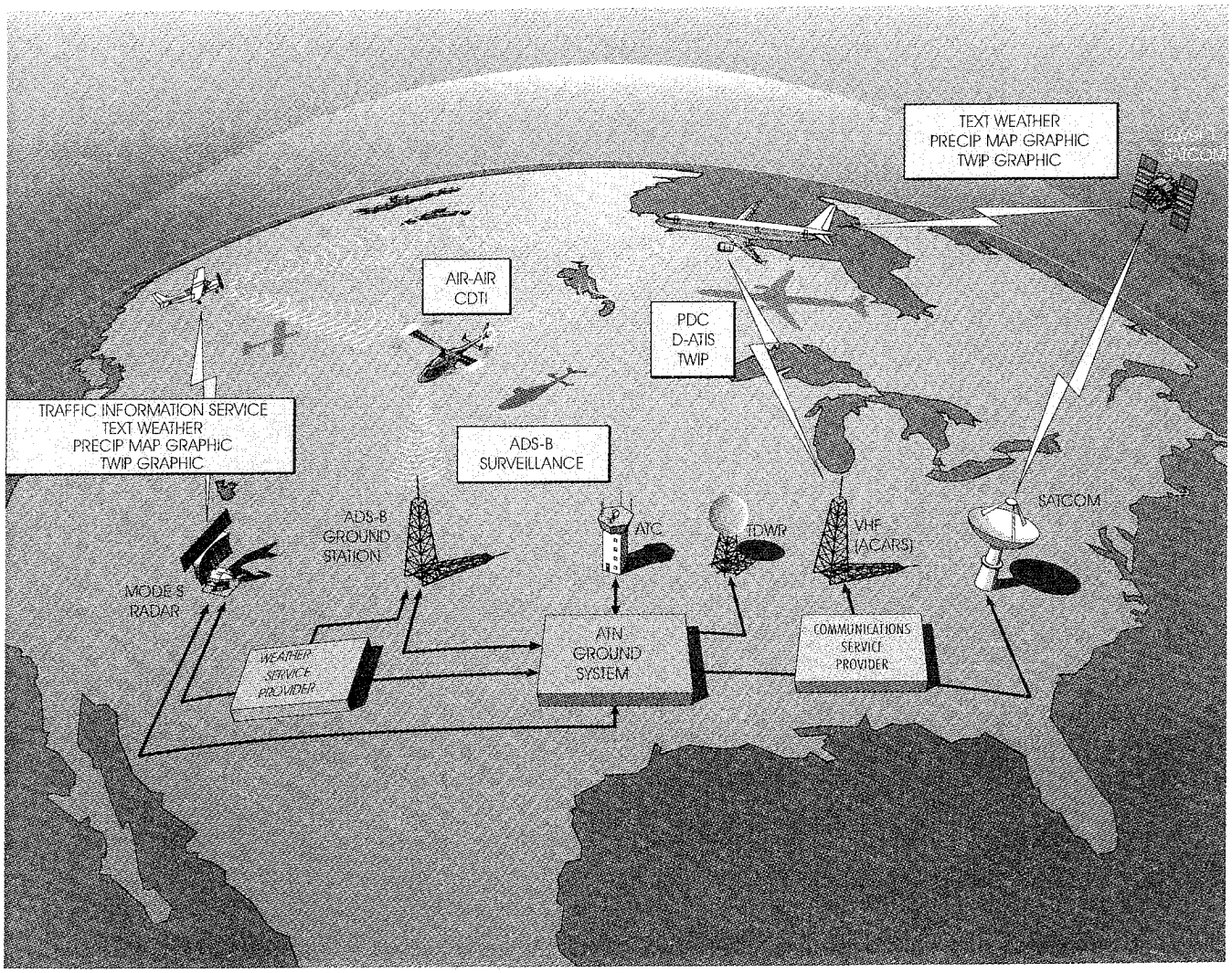
A benefits study, conducted at the FAA Technical Center and released in March 1995, estimated that airlines may save as much as $340 million annually in reduced ground delays and flight time through the use of data link pilot-to-controller communications. The study showed that voice channel congestion was reduced by up to 84 percent, cutting ground delays by 62 percent and flight times by almost 20 percent. The study also showed that data link gave controllers

more effective use of runways, potentially increasing airport capacity.

The transmission of graphical weather and traffic advisories, via data link, was demonstrated in FY 1995. Trials using data link and information from GPS satellites were conducted in airspace over the Pacific Ocean in collaboration with United Airlines. Data link is expected to be fully deployed by the year 2002 in en route airspace.

The FAA began implementing data link with the introduction of pre-departure clearances, a service that automates routine controller-pilot communications. In FY 1994, this service was available at 30 airports. By February 1996, pre-departure clearances will be available at an additional 27 airports.

Aeronautical Telecommunications Network (ATN). ATN is a digital network for the aeronautical community. Beginning in 1998, the FAA plans to use the ATN to deliver data link services to airspace users, revolutionizing the way pilots, airspace managers, aircraft operations centers, and civil aviation authorities communicate around the world. The ATN is also a key component of the global communications, navigation and surveillance air traffic management (CNS/ATM) initiative. In FY 1995, the FAA entered into an agreement with 11 domestic air carriers to develop a reference implementation of the



ATN is the airborne and ground Data Link information superhighway.

airborne data link router which is a key component of the ATN 9490.

Mode S Program. The Mode S is an advanced secondary radar which provides accurate surveillance and a built-in data link. Mode S is a cornerstone of the ICAO Future Air Navigation System (FANS) concept and the United States is leading its full scale deployment. In FY 1995, the FAA deployed 40 Mode S systems, bringing the total to 128 systems fielded from the procurement of 144 operational systems. Twenty-two sites have achieved full Mode S capability, and a software upgrade is underway to retrofit this functionality at sites already in the field.

Terminal Area Surveillance System (TASS). The FAA is developing TASS as the next generation terminal ground-based radar for detecting and predicting hazardous weather and aircraft surveillance. The agency is leveraging its research and development investment in TASS technologies and applications through cooperative research and development agreements for technology transfer with substantial industry investment; significant cost sharing in competitively awarded broad agency announcement (BAA) research/study contracts; and by participating in the Clinton Administration's technology reinvestment project (TRP) initiative administered by the Advanced Research Projects Agency (ARPA).

In FY 1995, the TASS program office, as the technical director for an ARPA TRP agreement: (1) oversaw completion of three milestones for the building and demonstration of an advanced airport radar system based on dual-use monolithic microwave integrated circuit (MMIC); (2) completed a cost/benefit analysis (CBA) of alternative concepts; (3) began cost/performance trades and simulations for an S/C-band single array radar design; (4) began an evaluation of Russian phased array and U.S. computer hardware/software technology; and (5) began trade studies on a one-face radar for low/medium density airports.

Terminal Digital Radar. The airport surveillance radar provides a means to determine the position of aircraft approaching, departing, or passing through airport terminal areas. Many airports have aging ASR analog radar which must be replaced by a digital radar system. This need will be met through a joint DOD/FAA acquisition of nondevelopmental item (NDI) radar or, if feasible, by upgrading the ASR-8 radar system to provide digital output.

Digital Voice Recorder System (DVRS) Contract Awarded. In August 1995, a contract worth $34.5 million, including options and extended warranty, was awarded to Denro, Inc., Gaithersburg, Maryland, for a commercial digital voice recorder system. The DVRS is designed to replace aging analog recording systems at as many as 800 FAA and DOD ATC facilities. The contract has a 2-year base period, two additional 2-year option periods, and a final 1-year option. Installation of off-the-shelf DVRS equipment will start within 3 months, as opposed to the typical multi-year timeframe. The contract also includes a cost-effective extended warranty on the product.

Future Very High Frequency (VHF) Air-Ground Communications System. This project was initiated in FY 1995 by Airway Facilities and Air Traffic to replace aging VHF air-ground radios. The new radios will operate in a new, fully digital, time division multiple access (TDMA) mode, which will provide increased communications capacity and capabilities. The TDMA design is based on studies conducted with RTCA, Inc., and ICAO. The studies concluded that, even with improvements in the present system, frequency assignment congestion is expected to become severe in parts of the NAS by the year 2002. After reviewing alternatives, the TDMA design, developed by the FAA, was recommended by both RTCA, Inc., and ICAO.

The TDMA system architecture provides four independent communications circuits on each 25 kHz VHF channel, compared to the present, single circuit per 25 kHz system. It can provide integrated voice and data link communications to all classes of users, requiring only a single antenna and radio. The new TDMA is also expected to provide increased protection from radio frequency interference and greater system security.

EXPANDING CAPACITY OVER THE OCEANS

Air traffic operations over the oceans differ from those in the domestic airspace in several key respects. The oceanic environment has no radar coverage, and navigation is handled using only aircraft onboard systems. Air traffic operations are performed manually or with limited automation. Air/ground communications are through a third party via high frequency radios that are subject to atmospheric

conditions as well as human error. To compensate for these limitations, aircraft traveling oceanic routes are required to maintain wide separation and to follow designated paths. The FAA has several projects underway to increase oceanic air traffic capacity and to provide users with greater flexibility and efficiency, without compromising safety.

Oceanic Traffic Planning System (OTPS). The OTPS is a multi-purpose traffic management tool that generates flexible tracks based on wind and weather conditions. Normally, flexible routes are generated several hours prior to departure. The FAA's improved flexible tracks capability, however, provides the structure, procedures, and processes which enable controllers to re-route an aircraft in midflight. This capability is especially valuable to aircraft flying long routes. In addition to the Pacific organized track system in place last year, the service was expanded, bi-directional, between Los Angeles and Sydney/Auckland. The United States is also assisting Canada in the implementation of a flexible track system extending from points in Eastern North America to join the North Pacific route structure in Alaska.

The OTPS also features an aircraft situation display and traffic advisories. The first OTPS was delivered to the Oakland, California, ARTCC in FY 1995, for test and evaluation. The Air Traffic Control System Command Center in Herndon, Virginia, will receive the second system.

Oakland Center Begins Oceanic Data Link Service. Oakland Center began operational trials on September 29 of the FANS-I oceanic data link service. The FANS-I system uses satellite communications to provide timely, accurate, and direct controller-pilot data link communications. United, Air New Zealand, and Quantas Airlines participated in the trials demonstrating the feasibility of this new service in South Pacific oceanic airspace. Prior to this technology, communications were provided indirectly via third-party high frequency voice radio operators.

Data link technology will reduce airline operating costs as aircraft can now be re-routed after departure to take full advantage of wind conditions at the higher altitudes in oceanic airspace. This will reduce flight time and save fuel, making oceanic flight less costly to the airlines.

Oceanic data link is an enhancement to the telecommunications processor system, delivered to Oakland Center earlier this year. It is the second of a series of planned incremental replacements of the FAA's oceanic automation system at Oakland, New York, and Anchorage Centers. Data link service is planned to be expanded to the central and north Pacific in 1996 and to the Atlantic in 1997. A new controller situation display is planned for 1996 and a complete replacement of the flight data processing system is underway, with deliveries scheduled to begin in 1998.

Advanced Oceanic Automation System (AOAS) Contract Awarded. A $140.8 million contract to upgrade and automate the FAA's oceanic ATC systems was awarded to the Hughes Aircraft Company, Fullerton, California. The system will provide significant benefits to oceanic airspace users, including improved fuel economy, increased capacity, and shorter transit times to Europe and Asia. Under this contract, Hughes will provide for the development, deployment, support, and maintenance of the AOAS at the Oakland, New York, and Anchorage ARTCC's and a supporting system at the FAA Technical Center.

AOAS will be developed in stages to minimize interruptions to current operations. It will include a broad range of data link services and use automatic dependent surveillance, a satellite-based tracking system that provides controllers with precise position information of each aircraft in the system. As an additional benefit, AOAS will feature air traffic controller work stations that take advantage of the highly capable hardware system developed for use in domestic ATC modernization. The contract calls for initial capabilities to be delivered by the summer of 1997.

CAPACITY THROUGH AIRPORT DEVELOPMENT

Success of New Denver Airport. Denver International Airport (DIA), the Nation's eleventh busiest airport, continues to reduce air traffic control-related flight delays for air travelers in Denver. A report issued by the FAA shows that during DIA's first 6 months of operations (February 28-August 28, 1995), the new airport logged 241,200 takeoffs and landings, with only 1,030 air traffic delays, a rate of about four-tenths of 1 percent. DIA's performance was a vast improvement over the 2.4 percent delay rate at Denver's old Stapleton International Airport for the same period in 1994. The FAA report noted that DIA's

0.43 percent delay average was much better than most of the Nation's airports with comparable traffic levels. The new airport's performance was more than twice as good as Minneapolis-St. Paul (1.00 percent), almost three times better than Detroit Metro (1.14 percent), about four times better than Boston's Logan International (1.65 percent), and seven times better than St. Louis' Lambert International (3.01 percent). The report is available on the Internet at http://www.faa.gov/apa/denver.htm.

The FAA has invested $170 million in safety systems at Denver International, including Doppler weather radar, a windshear detection system, and airport surface detection radar. The combination of advanced technology and three parallel runways lets DIA operate at high traffic levels even in severe weather. The FAA projects that the new airport's capabilities will help reduce delays nationwide and improve U.S. aviation system capacity.

Alaskan Airport Improvement Grants. The Alaskan Region approved 41 projects for a total of $72 million under the AIP. The largest individual grant for $10,623,336 was issued to the state of Alaska Department of Transportation for major runway and taxiway improvements at Deadhorse Airport. Other projects include a runway extension at Anchorage International, storm armor protection at Dutch Harbor and airport improvements at Kotlik, Unalakleet, and Aniak.

A 5-year plan to identify future airport development needs is being prepared by airport sponsors and the FAA. The AIP program for 1996 will emphasize rural Alaska but also provides for a runway extension at Fairbanks, apron improvements at Gustavus, seaplane float improvements at Ketchikan, and a parallel taxiway at Talkeetna.

New Runway at Dallas/Fort Worth International Airport. Construction of runway 16L/35R (formerly 16/34 East) is nearing completion at Dallas/Fort Worth International Airport. During its first year of operation, the runway is expected to reduce the costs due to delay by $55 million. The FAA has issued over $75 million in AIP funds. Total AIP funding, with the Letter of Intent, is anticipated to be approximately $210 million. In addition, the FAA has approved the collection and use of $115 million in passenger facility charges for the runway. The total runway budget was $340 million. The remainder of the project costs are funded through airport revenue bonds.

New Runway at Salt Lake City International Airport. The Salt Lake City Airport Authority commissioned runway 16R/34L in November 1995. This new parallel runway, with independent instrument flight rules (IFR) capability, was constructed to overcome capacity limitations during instrument meteorological conditions. The runway was built at a cost of approximately $150 million and is expected to reduce the current annual delay of 41,360 hours. The FAA has provided substantial AIP funding through a series of grants and has approved the collection and use of passenger facility charges to fund approximately $20 million of the total cost of the runway. Airport revenue bonds paid for the rest.

A new tower will be commissioned in early 1997 and a new TRACON in 1998. After the first 10 years of operation, the new runway and supporting ATC facilities will reduce annual delays by over 61,000 hours, saving an estimated $61 million each year. These projects are part of the Airport's Capacity Enhancement Plan which was completed in 1991, with the assistance of the FAA.

Reno/Tahoe International Airport. An Airport Capacity Enhancement Plan Design Team started a study on the Reno/Tahoe International Airport.

Expansion of Landside Capacity on the West Coast. The Western-Pacific Region issued AIP grants to states and metropolitan/regional planning organizations to address issues related to the Intermodal Surface Transportation Efficiency Act.

New Commuter Runway at Philadelphia International Airport. The environmental finding for a new 4,000-foot commuter runway at Philadelphia International Airport was approved. This runway will significantly reduce delays at this busy airport by allowing smaller aircraft to be segregated from large aircraft. The FAA also provided an AIP Grant to begin land acquisition for this runway.

Runway Extension at La Guardia Airport. A major project to provide an extension to the available runway safety area at La Guardia Airport is nearing completion. This 540-foot extension, which followed an extensive environmental study, more than doubles the area previously available. The safety area is currently undergoing a natural land settling process after which the surface will be re-leveled and the surface treated to prevent erosion.

Runway Extension at Baltimore-Washington International Airport (BWI). The Baltimore-Washington International Airport completed extension of its main instrument runway 10/28 by 1,050 feet in early 1995. The major cost for this project was funded under the AIP. FAA also coordinated this complicated project, which included relocation of two instrument landing systems, two approach lighting systems, and construction of new taxiways to access the runway. This extension will increase the ability of international carriers to provide nonstop service from BWI to cities such as Tokyo, Tel Aviv, and Rome.

New International Concourse at Atlanta Hartsfield International Airport. As a result of a significant increase of international arrivals, Atlanta Hartsfield International Airport opened a new $350 million, 24-gate international concourse. The former international gates have been transferred to American Airlines and Delta Airlines for domestic arrivals.

Proposed Expansion at Lambert-St. Louis International Airport. The FAA has provided an AIP grant for over $1 million to the St. Louis Airport Authority to study and determine the best way to expand the capacity of Lambert-St. Louis International Airport. The Authority has completed phases I and II of the master plan supplement, and the FAA has approved the aviation forecasts to be used in the planning process. The preferred alternative announced by airport officials in July 1995 called for a new parallel runway located on the west side of the airport in the city of Bridgeton. The total estimated cost to develop this alternative is $1.76 billion in 1995 dollars. The development is expected to take a total of 10 years with an escalated cost of $2.23 billion.

The citizens of Bridgeton have opposed the planned new runway. The FAA is preparing a draft environmental impact statement (EIS) and has selected the consulting firm Greiner, Inc., to help with the preparation. The first step was a series of meetings in September 1995 to gather information on the issues to be considered in the EIS. Approximately 40 Federal, state, and local agencies were represented and over 400 townspeople attended the meeting.

The EIS will examine the airport's preferred alternative, along with other reasonable alternatives. After the draft EIS has been prepared, it will be circulated for a 45-day comment period, after which the FAA will hold a public hearing. The issues raised by the public will be addressed in the final EIS. The agency plans to issue a Record of Decision in December 1996.

Missouri Airports Receive Flood-related Federal Funds. The state of Missouri received an additional $2 million in 1995 under the state block grant program for flood-related projects. The additional $2 million was used to replace funds earmarked by the state for other projects but used to repair millions of dollars of damage done to the general aviation airports in Missouri during the Midwest flooding of 1993.

Northwest Arkansas Regional Airport. A new commercial service airport located near Centerton, Arkansas, is being planned to replace Drake Field as the area's primary commercial service facility. The Northwest Arkansas Regional Airport Authority (NWARAA) has received AIP funding to initiate site preparation and land acquisition with the objective of the airport becoming operational by 1998. To date, the NWARAA has received approximately $21.3 million in funding commitments for its program. The FAA has issued $12.5 million in AIP funds to initiate phase I site preparation and utility relocation for the new commercial service airport.

Groundbreaking activities for the new airport were conducted on August 10, 1995. It will have a single 8,800-foot runway with instrument approach capability and is scheduled to open in late 1997.

Carroll County, Maryland Regional Airport. A new 5,100-foot runway was dedicated in April 1995. This is an important reliever airport for Baltimore-Washington International Airport. The new runway expansion brings the airport up to the latest safety standards for the majority of the general aviation fleet, including business jets. The successful completion of this project exemplifies the partnership between the FAA, the Maryland Aviation Administration, and Carroll County, with each sharing in the cost.

New Runway at Kansas City International Airport. A third runway was opened for visual flight rules (VFR) operations at Kansas City International Airport in the fall of 1994. This development greatly enhances both the capacity and flexibility of the airport. It is anticipated that the other two runways will be removed from service on and off over the next

4 years as they are being reconstructed after some 25 years of service.

Runway Extension at Des Moines International Airport. The FAA has approved an airport layout plan (ALP) and finding of no significant impact (FONSI) for a $57 million runway extension project, including costs for land acquisitions and roadway relocations. This project is important to the community and has generated only limited opposition. The primary purpose of the runway extension is noise mitigation. The extension is included in a Part 150 study. The project will take approximately 5 years to complete and will require multiple grants.

Runway Improvements at Albuquerque International Airport. The city of Albuquerque, New Mexico, widened and strengthened runway 3/21 at Albuquerque International Airport to accommodate air carrier traffic. The enhancement was recommended in the city's 1992 Airport Capacity Enhancement Plan. According to the plan, the runway upgrade would result in an annual delay savings ranging from not less than $2.4 million to as high as $17.6 million.

Runway Rebuilding at Sioux City. Jet commercial air service was resumed in August 1995 to the Sioux Gateway Airport. Since that time, enplanements have increased 55 percent year to date in 1995. AIP funds will provide $6.2 million for a 7,500-foot by 100-foot reconstruction of runway 13-31. The Iowa Air National Guard will provide $4 million in additional funding to rehabilitate the remainder of the runway. The estimated projected completion date is November 1996.

New General Aviation Airport at Dulce, New Mexico. One new general aviation airport was constructed in the Southwest Region in FY 1995. The Dulce Airport will serve the Jicarilla Apache Tribe, with a runway measuring 7,500-feet by 75-feet.

Airport and Airspace Capacity Tactical FY 1995 Initiatives. A commuter Gate Placement Design Team Study examined Los Angeles International Airport delays for the current commuter gate locations and various alternative sites. The airfield analysis indicated that relocating commuter aircraft gates now and at future forecast levels would not increase airfield delay.

CAPACITY THROUGH MILITARY AIRPORTS

Military Airports Program. The FAA is continuing to pursue a series of initiatives with DOD, states, and local governments for joint civil and military use of existing military airfields and the conversion of military airfields being closed by DOD. There are currently about 43 military airfields closing as a result of the DOD's base closures programs approved in 1988, 1991, 1993, and 1995. These military airfields represent a Federal investment of about $1 billion each or a total of $43 billion in airfield associated infrastructure.

There are also a number of large parcels of surplus military property that are adjacent to existing civil airports, which are also being considered for transfer to civil airports for expansion projects. If these military airfields are determined to have a civil aeronautical demand, they are placed in the FAA's National Plan of Integrated Systems, making them eligible to receive capital development funding. Comparatively small investments are being made from the AIP to provide planning and capital development funding needed to convert the airfields to civil airports.

Airport feasibility and master planning grants, amounting to about $10 million from the AIP, have been issued to about 30 state and local government civil airport sponsors to evaluate civil aeronautical feasibility and airport master planning at closing military airport locations. Capital development grants for over $100 million dollars have also been issued to six of the military air fields that have become civil airports. There are about 20 existing joint-use agreements in addition to 15 long-term leases that have been issued by DOD allowing airport civil sponsors to operate at military airfields or allowing the closing airfield facilities to operate as new civil airports.

About one-third of the converting airports may have the potential to become reliever airports, and a number of the remaining airfields could serve as general aviation airports. Some of these airfields are located in or near major metropolitan areas and might add significant new airport capacity to the national airport system. It is estimated that these newly converted airports will provide about 40 additional major civil runways, with lengths up to 12,000 feet, capable of handling large civil aircraft.

The following military bases were closed during FY 1995:

Guam. Agana Naval Air Station was closed on March 31, 1995, and the airport transitioned to a civil airport under Guam Airport Authority. The airport had operated under joint use with the Navy while tower ATC services were provided by Navy controllers. With the closure of Agana Naval Facility, tower services were assumed by Barton ATC International, under the FAA Federal contract tower program on April 1, 1995.

California. Castle Air Force Base closed September 30, 1995. The base had a military radar approach control unit and a terminal radar located on base property. FAA assumed control of the airspace September 5, 1995, using radar control from adjacent facilities and manual control. The radar will be assumed by FAA, remoted to Stockton TRACON, and the airspace will be controlled by radar controllers at Stockton. It is anticipated that the transition will be finalized in October 1995.

Arizona. Williams Air Force Base closed September 1993, and its radar has not been used since the closure. Recently, Arizona's U.S. Senators requested that radar service be implemented at Scottsdale Tower. Williams is the only radar sensor which provides coverage at Scottsdale; therefore, the Williams radar will be remoted to Phoenix TRACON for processing, then, the signal sent to both Scottsdale and Mesa Towers. This will permit controllers in both towers to provide radar traffic advisories to pilots operating near these airports.

Joint-Use of Point Mugu Naval Station and March AFB. Studies of Point Mugu Naval Air Weapons Station and March Air Force Base concluded that joint use by civil aircraft is feasible. The Southern California Area Council of Governments developed the studies with FAA grant funds at the request of local communities. Joint civilian use at the military airfields has the potential to relieve delays to passenger and cargo aircraft at Los Angeles International and other delay-impacted airports in the area. The Point Mugu Regional and the March AFB Airport Authorities are considering implementation of joint-use.

Transfer of Tipton Army Airfield at Odenton, Maryland. The FAA signed the FONSI study which completed the environmental actions necessary for the transfer of Tipton Army Airfield to the local governments for operation as a public airport and reliever to BWI. This culminated 5 years of coordination between FAA, the local community, the U.S. Army Base Closing and Realignment Committee, and the state. This action opened the door for a bi-county authority made up of Howard and Anne Arundel Counties to take ownership and begin operation of the airport. It is anticipated that some 300 aircraft will be based at the airport. It will open to the public after completion of the environmental clean-up, which is anticipated to be the summer of 1996.

Eaker AFB, Arkansas; England AFB, Louisiana. Two records of decisions were signed for closed military facilities in the Southwest Region. The Blytheville, Arkansas, community signed a long-term agreement with DOD for use of the Eaker AFB airfield and associated properties. The Alexandria, Louisiana, community signed a long-term agreement with DOD for the entire facility formerly known as England AFB. Both facilities will be used as commercial service public use airports.

Austin-Bergstrom International Airport. The city of Austin, Texas, is in the process of converting the closed Bergstrom Air Force Base into a new commercial airport. Upon completion of the Austin-Bergstrom International Airport, the existing Robert Mueller Municipal Airport will be closed. This activity requires the FAA to construct an ATCT/TRACON facility and all support equipment on the new airport. The city of Austin plans to open the airport for air cargo operations in October 1996 and for passenger service in October 1998.

During FY 1995, the FAA provided approximately $16.2 million in AIP funds toward the city's $90.9 million letter of intent to develop the airport. In August 1995, a contract for the construction of the new ATCT/TRACON was awarded. Construction began in the fall of 1995, with completion scheduled for the summer of 1997.

The airport design includes two parallel north/south runways with sufficient centerline separation to permit implementation of dual simultaneous parallel ILS approach procedures. This design will provide up to 100 percent more capacity over the existing Austin Mueller Airport.

A contract was awarded in August 1995 for the ILS, with commissioning scheduled in early October 1996

to support the implementation of air cargo service later that month.

On April 29, 1995, the FAA granted approval for collection of $333.2 million in passenger facility charges over the coming years to support the bond financing package for the airport. The air carriers are concerned with the cost of the new airport and continue to work with the city to reduce the scope of airport development.

INDUSTRY VITALITY

Promote U.S. aviation efficiency and U.S. preeminence in the global aviation system

REDUCING THE REGULATORY AND ECONOMIC BURDEN

Regulatory Reforms. In September 1995, the FAA released a report titled "The Regulatory Reinvention Initiative Report," outlining recent steps by the agency to enhance the regulatory process and reduce economic burdens on Americans, while maintaining the highest level of safety. Part of an overall effort by the Clinton Administration to streamline and improve Government operations, the report focuses on efforts by the FAA to meet goals contained in Vice President Gore's National Performance Review. It recommended elimination of 13 percent of FAA regulations and substantial revision of 37 percent. The report also reviewed several significant achievements of the FAA during the year.

Among those cited is the agency's "Hate-a-Reg" program which elicited over 400 recommendations from the public on how to reduce unnecessary regulations. Suggestions covered matters such as aging aircraft, medical certification requirements, aircraft annual inspections, airport security, random drug testing, and the costs associated with the mandatory installation of the TCAS. The FAA is following up on each of the recommendations.

The FAA has moved to establish stronger partnerships with citizens, businesses, and organizations impacted by regulations. Administrator Hinson convened a series of grassroots meetings across the Nation as part of the drive for greater public involvement. The most continuous partnership effort is the ARAC, which enables all elements of the aviation community to participate early in the rulemaking process.

Challenge 2000. In July 1995, Administrator Hinson established a task force to conduct a thorough review of the agency's regulation and certification policies and procedures. The review will help the agency determine what needs to be done to overcome the increasing challenges of regulating the aviation industry and certifying rapidly changing technologies as America enters the 21st century. The Challenge 2000 Task Force will be assisted by Booz-Allen & Hamilton Inc., a world-class management consulting firm already under contract to the FAA. The review is expected to take approximately 9 months to complete.

Cutting Red Tape. In response to President Clinton's directive to eliminate unnecessary reporting, the FAA has identified three reports that can be filed less frequently. The agency is also using automation to lessen the burden of filling out those reports which are still essential.

Less Reliance on Enforcement. The agency is continuing to emphasize self-monitored compliance, education, and prevention as an alternative to a heavy reliance on civil penalties or suspension of certificates. Examples are a remedial training program for private pilots as well as a reporting and correction system for air carriers, aviation manufacturers, and repair stations.

HARMONIZING RULES AND PROCEDURES

Harmonization of Standards: Small and Commuter Aircraft. At the end of 1995, the FAA published final rules harmonizing U.S. FARs for certifying small and commuter planes with those of the Joint Aviation Regulations (JAR) of Europe. Harmonization is intended to eliminate or modify those duplicative requirements which contribute more to cost than to safety. The FAA is promoting these same principles in regional groups around the world.

Harmonization of Standards: Repair Stations. In FY 1995, the FAA completed identification of final differences between JAR 145 and FAR 145 (operation of repair stations) and initiated development of recommendations for revising Part 145 of the FAR to include any special conditions.

JAA Team Inspects U.S. Repair Stations. A team of inspectors from Holland, France, and the Joint Aviation Authorities (JAA) performed inspections on 15 U.S. repair stations in Oakland, California, and

Phoenix, Arizona. The purpose of the exercise was to acquaint U.S. repair stations with the foreign authorities' requirements. The Western-Pacific JAA Coordinator, who had attended a preparatory meeting with the JAA in the Netherlands, accompanied the team and provided assistance during the repair station surveillance.

MEETING NEW AVIATION REQUIREMENTS

National Route Program (NRP). In January 1995, the FAA began offering users routing options while in the en route phase of flight at or above 39,000 feet on flights of more than 1,500 miles. The ceiling has since been lowered to 33,000 feet east of the Mississippi (excluding La Guardia, Kennedy, Baltimore-Washington, and Washington National Airports) and 31,000 feet to the west. Participation in the program has been increasing and currently includes about 750 flights a day out of 12,000 eligible flights. Industrywide savings attributable to the current NRP have been estimated to exceed $40 million annually.

"Free Flight": A New Operational Concept. The FAA and aviation users are exploring a new air traffic management concept called "free flight." A new concept is needed to accommodate a projected 40 percent increase in IFR aircraft operations handled by FAA ARTCC's over the next two decades and to remove unnecessary restrictions that cause costly delays.

In its ultimate form, free flight would let pilots fly whatever route makes sense under the existing conditions. Controllers would continue to play a vital role in air traffic management. Pilots would still have to file flight plans, which could be modified by air traffic control if they posed any safety hazards. Controllers would receive altitude, speed, position, and heading data automatically from aircraft in flight, but they would intervene only if computers predict an "alert zone."

The enabling technologies of free flight are: GPS with WAAS enhancements; fast, error-free data-link communications between the cockpit and the ground; highly reliable advanced automation systems in ATC facilities; and next-generation on-board TCAS. All four are presently being developed by the FAA. Basic TCAS began going into cockpits in the late 1980's. A contract has been awarded to enhance the GPS signals; data link is in operation at many U.S. airports and over the South Pacific *(see System Capacity).* The agency is also addressing the dramatic changes in procedures and culture which the concept would necessitate. International commitments must be considered as well.

Given the complexity of the issues, the current structure of ATC in the United States will most likely continue to exist well into the next century. The FAA is reviewing an RTCA task force report released in November 1995 which offered 45 recommendations for phasing in free flight by the year 2010. Meanwhile, the agency is working to broaden the National Route Program and to loosen procedural constraints as much as safety considerations will prudently allow.

FAA Approves Boeing 777 Design. The FAA declared the Boeing 777 design "safe and airworthy" after putting the new airplane through the most comprehensive testing and certification process in aviation history over the past 5 years. The type certificate was presented to Boeing in an official ceremony on April 19, 1995. The Boeing 777 is the world's largest two-engine airplane and the first U.S. designed airplane to employ fly-by-wire technology, which allows pilots to command the flaps, rudder, and other control surfaces electronically instead of relying on cables and pulleys.

FAA and NASA Form Partnership to Improve Air Transportation Efficiency. FAA Administrator David Hinson and NASA

NASA Administrator Daniel Goldin and FAA Administrator David Hinson have established an integrated program for air traffic management system development.

Administrator Daniel Goldin signed a memorandum of understanding that initiates joint research and development activities to improve the efficiency of the National airspace system. The initiative will be managed by a NASA/FAA integrated product team which will address both near- and long-term requirements, with initial emphasis on improvements that can be achieved within the next 10 years.

Layered Elastic Design for Airport Pavements. With the advancement in aircraft development in terms of increasing weight and complex landing gear systems, it is essential that advanced airport design procedures be established. The FAA has completed the initial development of an advanced pavement design based on layered elastic theory which is capable of accommodating pavement structural behavior caused by the heavier aircraft and complex gear design, such as that associated with the Boeing B-777.

FAA-INDUSTRY PARTNERSHIPS

Aeronautical Telecommunications Network. In July 1995, the FAA and 11 U.S. airlines established an unprecedented Government-industry consortium to develop the framework for an aeronautical telecommunication network (ATN). The state-of-the-art system will enable airlines and other airspace system users to rapidly and reliably communicate worldwide. Under the consortium agreement, the airlines have formed a corporation, ATN Systems, Inc., that will work with the FAA to develop the systems to meet the requirements of the various airspace users. The FAA and the airlines will work together to foster commercial development of the equipment and systems required for the network rather than taking the traditional approach of having the aviation industry and the Government conduct separate lengthy and costly development programs. The agreement, which completes an action item set forth in the Clinton Administration's National Performance Review, establishes a working model for Government/industry cooperation in the development of a worldwide standard for aviation communication. *(See "Data Link," page 31.)*

FedEx and the Southern Region's Quality Through Partnership Effort. Managers at the Memphis ATCT have worked closely with the management of the Federal Express Corporation to meet its service requirements. Improvements have included an additional ground control position on the midnight shift to reduce frequent congestion and delays and a change in procedure so that a pilot is no longer required to obtain verbal clearances for departures.

Aviation Research Grants. Over $21.5 million was awarded in FY 1995 for new grants and cooperative agreements, and an additional $26 million was awarded for continuing grants. Projects focused on aviation security, aircraft and airport safety technology, the effects of weather on aviation, human factors, and operations research. Cooperative agreements totaling $4.8 million were awarded to three air carriers to participate in the explosives detection system demonstration project. These cooperative agreements were awarded on a competitive and cost-shared basis.

Major accomplishments include a $2.2 million grant to the Great Lakes Composites Consortium, Inc., for testing and development of blast resistant cargo containers for aviation security and a $2.0 million grant to Stanford University to support the implementation of the WAAS.

FAA Innovative and Cooperative Research. To assure ready access to new ideas and technologies, the FAA has developed a number of approaches to encourage interactions between FAA technical staffs and researchers at universities, Federal laboratories, and R&D facilities in the private sector. These approaches include aviation research grants, Centers of Excellence (COE), technology transfer, and SBIR.

Air Transportation Centers of Excellence in New Jersey, Georgia, and Illinois. The Air Transportation COE partnerships were authorized by Congress in 1990 to assist the agency in conducting research on critical issues pertinent to developing and maintaining a safe and efficient air transportation system. The centers are selected by the Administrator of the FAA, based on technical merit and other factors.

Funding for the centers is provided under a cooperative agreement whereby the Federal Government matches, dollar for dollar, funding from non-Federal sources over the course of the award. This joint funding solidifies the long-term partnership which extends from 3 to 10 years. Thereafter, the centers are expected to be self-supporting. An innovative new funding mechanism gives the FAA, for the first time, a way to acquire rapid prototyping and engineering

development from the centers. The next center to be established will specialize in operations research.

Joint Center of Excellence in Computational Modeling of Aircraft Structures. Located at Rutgers University and Georgia Institute of Technology, this center (established in 1992) hosted a third annual review of technical research results for FAA management and technical representatives. Including matching funds through 1995, the joint center represents an $8.5 million effort.

COE in Airport Pavement Research. Established by an FAA award of $750,000, this center is operated by the University of Illinois, with the participation of Northwestern University faculty and students. The research program, which is conducted at the former Chanute Air Force Base, centers on new pavement technologies required by the new generation of heavy aircraft (e.g., the Boeing 777), nondestructive testing, and the rehabilitation and reconstruction of existing pavement.

The FAA joined destinguished visitors from the State of Illinois at a ribbon cutting ceremony for the new Center of Excellence for Pavement Research at the University of Illinois.

FAA Sponsors Innovative Technology. The SBIR Program is a congressionally mandated program intended to encourage small businesses to participate in Government-sponsored R&D projects. One such firm, Delta Information Systems (of Horsham, Pennsylvania), developed and marketed a system that compresses and transmits video images in digital form over telephone lines. This technology is being used to replace the FAA's point-to-point microwave network for transmitting radar images to towers and TRACON's. Delta is the second company to reach commercial status in the FAA's SBIR Program and received this year's Small Business Medallion Award by the Air Traffic Control Association.

Technology Transfer Program. The FAA invests each year in research, engineering and development. Through technology transfer, companies in the private sector can exploit this resource to develop new products for U.S. and overseas markets. CDRAs are the means by which private industry can gain access to the knowledge and expertise of the FAA. The Technology Transfer Program Office published "An Assessment of Technology at the FAA: Opportunities for Technology Transfer." This document highlights several innovative technologies with potential for commercialization. In 1995, the program office managed 34 active CRDA's, began four new ones, and is in the process of initiating eight others. Examples include:

Heated pavement system. The FAA and Superior Graphite Company, Chicago, Illinois, completed tests last winter on an electrically conductive asphalt pavement system which allows airports to keep runways free of ice and snow, without the use of environmentally hazardous chemicals. Success of these tests has allowed Superior Graphite to market the technology as the SNOWFREE Heated Pavement System. Initially targeting airports in the northern half of the United States, the company has installed a demonstration section on a taxiway at O'Hare International Airport.

Airport arrestor beds. Agreements are in process with the Port Authority of New York and New Jersey for the design and installation of arrestor beds at area airports and with Engineered Systems of Aston, Pennsylvania, to test new materials and methods for soft ground arrestors. (*See System Safety.*)

FAA Industry Day 1995. The FAA recognized 17 of its scientists and engineers in the first-ever Technology Transfer Awards program. This program honors those individuals who played important roles in the transfer of science and technology to governmental or commercial entities outside the FAA. Awards were presented during FAA Industry Day, held by the Office of Aviation Research at the Technical Center on April 15. Over 600 people from Government, industry, and academia toured the FAA's research and test facilities and attended briefings on current research projects which may have potential as marketable products.

FAA Industry Day promote awareness of technology transfer program and marketable products.

Disadvantaged Business Enterprise (DBE) Program. DBE's received over $311 million in contracts awarded under AIP projects, equal to 23.3 percent of the total. This is the highest level achieved by airport sponsors since 1988, when the statutory DBE goal of at least 10 percent was first enacted in the airport grant legislation. Firms owned and operated by women accounted for 6.4 percent of the total, while firms owned and operated by minorities and other disadvantaged individuals accounted for 16.9 percent. In the Southern Region alone, airports receiving AIP grants awarded contracts amounting to $412,919,000. Approximately 27.4 percent of this amount, or $113,209,000, was awarded to DBE's.

DBE concessionaires earned over $566 million in gross receipts at primary airports, equal to 8.3 percent of the total gross receipts earned by all concessions. (A primary airport is one that has more than 10,000 annual enplanements annually.) While the level of DBE participation is short of the statutory goal of at least 10 percent, it represents an increase of 1/2 percent over the previous year.

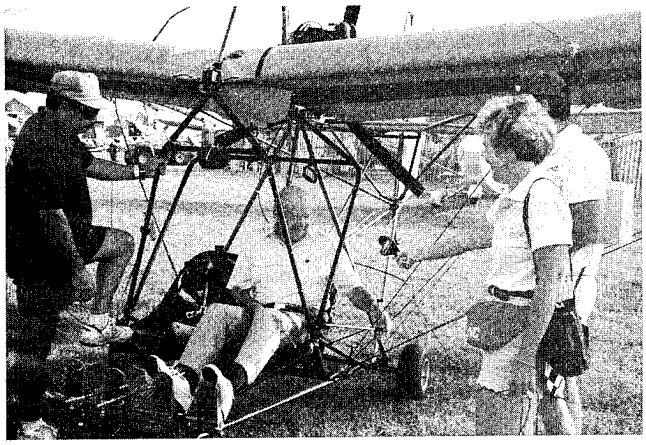
The FAA forwarded a draft final rule to the Office of the Secretary to amend the DBE Program for airport concessions. The rule, when published, will allow airport sponsors to count DBE's that perform management contracts, as well as purchases of goods and services provided by DBE's, toward the goals of the DBE concession plan.

Privatization of the Radio Spectrum. Recent legislation requires the transfer, in 1999, of at least 200 MHz of Federal Government radio spectrum to the private sector. Such a transfer will have a significant impact on civil aviation and involves an additional cost to the FAA of nearly $700 million. The FAA's Spectrum Policy and Management Office is working to lessen the impact of such transfers so that civil aviation safety and system capacity will not be jeopardized. It has obtained an exemption for over 100 locations on the grounds of aviation safety requirements.

REVITALIZING GENERAL AVIATION

General Aviation Action Plan. Developed in 1993, the Action Plan sets out in detail the FAA's commitment to aid the general aviation industry and the industry's efforts to help itself. Over the past 2 years, 22 comprehensive initiatives were developed by the General Aviation Coalition and the FAA. To date, 19 have been accomplished and work is progressing on others. Among the initiatives already completed are revised certification and training requirements for pilots, flight and ground instructors, and pilot schools; a new category of certification for light airplanes that is less complicated and less expensive; and a proposed rule that will allow recreational pilots to self-certify their medical fitness.

Advanced General Aviation Transport Experiments (AGATE). This is an ongoing program intended to encourage the deployment of advanced technology in general aviation. NASA, the FAA, and 70 companies and universities around the country are developing work packages that include the pilot-cockpit interface, propulsion systems, deicing systems, advance materials manufacturing, ground infrastructure, and in-flight infrastructure.



FAA Administrator David Hinson learns to fly an ultralight at Oshkosh.

Atlanta, Georgia, Short-Haul Transportation System. In preparation for the 1996 Olympics in Atlanta, the FAA is cooperating with other Federal agencies, local governments, and the private sector to develop the transportation infrastructure required to move people and cargo throughout the North Georgia region. The effort involves a demonstration IFR heliport network (which can also be used for emergency medical evacuations), data link communications, and integration with surface modes of transportation.

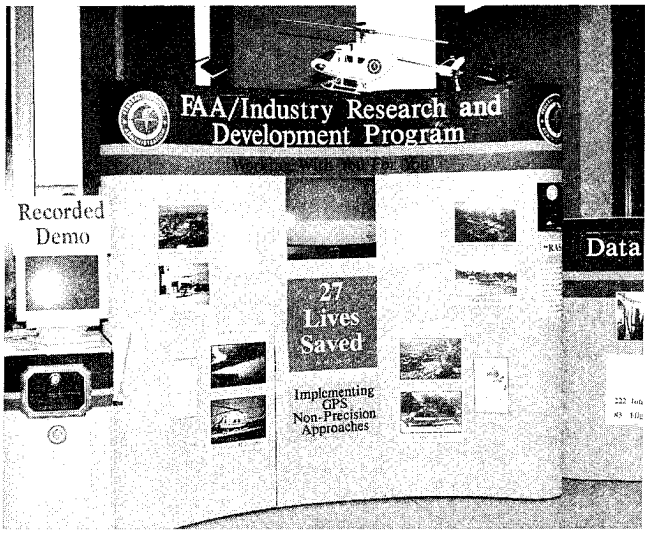
New ILS at Independence, Kansas. The Cessna Corporation is constructing a factory at Independence to manufacture light aircraft such as the Cessna 172. The FAA has agreed to provide a Category I ILS and assume maintenance responsibilities upon commissioning. The city of Independence has agreed to complete the engineering, construction, and installation activities for the ILS. Construction is scheduled to start in the fall of 1995.

Small Airplane Certification. Six new FAR 23 airplanes were certificated in FY 1995, including the Diamond Katana and the Zenith CH 2000. In addition, four gliders received type certificates.

GPS-Equipped Emergency Medical Helicopters Tested in Tennessee, Louisiana, Wisconsin, and Minnesota. Major medical centers in the United States were the sites for a project to test instrument approaches for helicopters using the GPS. The tests used helicopters which serve the Erlanger Medical Center in Chattanooga, The University of Wisconsin Hospital in Madison, and the Mayo Clinic in Rochester, Minnesota. Aircraft and crew from Petroleum Helicopter, Inc., which serves offshore oil sites in the Gulf of Mexico, also participated in the project.

The project had two goals. The first was to collect in-flight data for developing helicopter GPS standard instrument procedures. Using the 50 test approaches flown at the four sites, performance criteria have been drafted and will be circulated for comment; a final order is expected to be signed by February 1996. The second goal was to certify the first helicopters for GPS approaches and commission the first helicopter GPS instrument approaches.

During the first year following the commissioning of the world's first copter GPS approach at the Erlanger Medical Center, 34 lives have been saved. Severe trauma patients, who once had to be brought by ambulance, can now be transferred directly to the hospital's rooftop helipad, even in poor weather conditions.



Implementing GPS non-precision approaches was one of several displays featured at the FAA Industry Day Forum.

The FAA's General Aviation and Vertical Flight Program Office originated the project, with additional support from the FAA's Satellite Program Office. Working with these offices were regional teams from Air Traffic, Flight Inspection Policy and Standards, Flight Procedures Development, Flight Standards, Research and Development, and Aircraft and Avionics Certification Offices. Nearly half of the project's costs were covered by funding sources outside the FAA.

Control Tower Contracting. The FAA followed through on its program to contract out operation of ATCT's with low activity levels. The agency converted 25 more of its towers to contract operation during the fiscal year, and contract operations began at 11 new start locations, bringing the total of contract towers to 93. In November 1995, the FAA announced that it will discontinue funding for seven low-activity towers after the end of 1995. The seven facilities include four FAA-operated and three contractor-operated towers. The agency has found that almost $200,000 per year can be saved for each tower, with an estimated total savings of $20 million per year beginning in 1999.

INTERNATIONAL LEADERSHIP

Achieve, through U.S. leadership, international standardization of a safe and efficient global air transportation system.

LEADERSHIP TO ENHANCE GLOBAL AVIATION SAFETY AND EFFICIENCY

International Aviation Safety Assessment Program (IASA). Countries whose air carriers fly to the United States must adhere to ICAO's safety guidelines. Since 1991, the FAA has been working directly with 93 countries on a cooperative basis to assess the oversight of their carriers. In FY 1995, the FAA conducted 12 initial assessments and nine reassessments for foreign countries. In addition, technical assistance was provided to more than 66 countries, and two training programs dealing with various aspects of international inspection were developed. The first is a 2-day seminar on ramp inspections of foreign operators. The other is a 3-day seminar on conducting assessments and consultations with foreign civil aviation authorities.

New ICAO Safety Improvement Oversight Program. An important initiative culminated in June when the ICAO Council gave its final approval to establish a new ICAO safety oversight program modeled after the FAA international aviation safety assessment (IASA) program. The FAA had worked diligently throughout FY 1995 to help ICAO bring this program to fruition. The ICAO program is open to Member States on a voluntary basis and will involve both safety oversight assessments based on ICAO standards, as well as follow-on technical assistance. Once operational and mature, the ICAO program may reduce the burden of assessments and technical assistance currently being experienced by the FAA.

ICAO General Assembly. Administrator Hinson headed the United States delegation to the 31st General Assembly of ICAO, which met in Montreal, Canada, September 19-October 4. The FAA presented a number of proposals and found support within ICAO for its positions on key operational, technical and governance issues, including the worldwide transition to the global navigation satellite system (GNSS), and ICAO institutional reforms.

Bilateral Aviation Safety Agreement with the Netherlands. In a move designed to increase international cooperation in aviation safety, U.S. Ambassador K. Terry Dornbush and Dutch Minister of Transport Annemarie Jorritsma signed a revolutionary bilateral aviation safety agreement (BASA) on September 13, 1995, in The Hague. The agreement is designed to promote the highest standards of aviation safety by increasing cooperation in such safety regulatory areas as aircraft certification, approval and monitoring of maintenance facilities, and flight simulator evaluations. It forms a regulatory partnership between the two countries, improving efficiency and expanding each nation's ability to respond to changes in the international aviation industry. The BASA could also encompass the approval and monitoring of airmen, aviation training establishments, and flight operations.

Cooperation with Europe in Research and Development. A "Statement of Intent" relating to cooperation between the FAA and European Joint Aviation Authorities (JAA) was signed at the 12th annual FAA/JAA meeting on harmonization, held in Seville, Spain, in June 1995. The agreement formalized a set of guiding principles which would help prevent duplication of research efforts and provide for more efficient use of research resources.

Central and Eastern European Airspace Initiative. The FAA continued activities in 1995 to assist Central and Eastern European countries with restructuring their airspace and ATC systems along the lines used in the West, especially in regard to civil/military coordination. In January, a study with recommendations for ATC and airspace architecture in the Czech Republic, Hungary, Poland, and Slovakia was presented at a multinational conference cosponsored by the FAA in Trencin, Slovakia. In September, an additional study for Albania, Romania, and Slovenia was presented at a conference in Sinai, Romania.

Aviation Activities with the Russian Federation. During FY 1995, the FAA continued working with the Russian Department of Air Transport (DAT) to implement the 31 recommendations of the Russian Civil Aviation System Safety Evaluation that was jointly conducted by the FAA and its Russian counterparts in late 1994. Among 1995 actions, the FAA helped Russian legal experts draft a national air code for effectively regulating air safety in a free-market environment; helped organize a regional accident investigation and prevention seminar in Moscow; provided training in the United States for 25 DAT safety inspectors; and

conducted in-country safety seminars for Russian airlines.

On June 30, Vice President Gore and Prime Minister Chernomyrdin signed a Memorandum of Understanding to strengthen technical cooperation toward a U.S. - Russian Bilateral Airworthiness Agreement, currently targeted for conclusion in late 1996. In support of this effort, FAA conducted six courses for Russian aviation officials and industry representatives on U.S. aircraft certification requirements and also continued to study the manufacturing and certification processes currently in use in Russia.

The FAA also continued to participate in meetings of the Russian/American Coordinating Group on Air Traffic Control along with the technical representatives of Russia, North and South Korea, China, and Japan to continue working toward the opening of new, shorter, more efficient air routes over the Russian far east and other territory that has been closed in the past to commercial air traffic. Finally, the FAA worked extensively with Russian officials to facilitate access by U.S. airlines to designated Russian airports. As a result, Alaska Airlines was able to commence passenger service to Elizovo Airport at Petropavlovsk-Kamchatsky.

In an important communications development, the FAA successfully tested a new digital satellite data link that will greatly increase the safety, capacity, and efficiency of international routes over Russia. Under an agreement signed with Russian civil aviation authorities, a team led by FAA experts installed prototype controller work stations at the control centers in Anchorage, Alaska, and Anadyr and Petropavlosk-Kamchatsky. At the same time, the FAA established digital communications links to a ground station at Petropavlosk-Kamchatsky, connecting it to the Anchorage Center using the Russian GORIZANT satellite. A similar satellite linkage will be installed at Anadyr.

Harmonization of Regulatory Standards and Air Traffic Management in North America. Phase I of the North American Free Trade Agreement (NAFTA) project concerning cross-border operations of specialty air service among the United States, Canada, and Mexico was completed this year. The Tri-national Steering Committee and three working groups reached agreements on airworthiness, flight operations, and licensing. This initial phase involved the comparison of existing aviation standards and regulations in order to identify significant differences and, where possible, to resolve them. Over 90 percent of these differences were harmonized. To realize the goal of a harmonized system for communications, navigation, surveillance, and air traffic management in North America, the three countries also agreed to develop a plan identifying near-, mid-, and long-term steps. The Third North American Aviation Trilateral Conference, to be held in Canada in May 1996, will formalize the final plan, which will complement harmonization plans being developed by ICAO and other regional planning groups.

Communications in United States and Gulf of Mexico Airspace. Initial testing of the newly established Mexican communications satellite network began at the Houston, Texas, ARTCC in January 1995. This network will provide a better means for exchanging ATC information between the FAA and Mexico's air navigation authority, Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM). Availability is expected in early 1996. Completion of the Houston ARTCC earth station provides the United States with an important, second point of interface with Mexico, the other being located at the Albuquerque ARTCC.

In a related development, the flight data input/output (FDIO) facility is being installed in the new Solidaridad II satellite for use in the Gulf of Mexico. FDIO testing is also being conducted between Merida Area Control Center (ACC) and Houston Center. In addition, the FAA continued to upgrade the low density radio communication link (LDRCL) between ATCT along the U.S.-Mexican border and also continued design work on a system to provide direct pilot/controller communications throughout the Gulf of Mexico. This latter system involves the installation of remote communications air/ground radio equipment (RCAG) on offshore buoys. Finally, the FAA continued to work on refining the communications protocols between the ATC systems of the United States, Canada, and Mexico. This will ultimately provide a more efficient exchange of flight data when messages between the U.S. host computer and the Mexican and Canadian systems are all translated into a common ICAO format.

Gulf of Mexico Airway Realignment. To increase user convenience, airspace efficiency, and safety, airways in the Gulf of Mexico are being realigned in

three phases. Phase one is complete and was published September 14, 1995. This included realignment of three airways, elimination of one airway, upgrading of two very high frequency (VHF) omnidirectional ranges (VOR), and realignment of special use airspace to remain within the confines of the airway changes.

"Open Skies" Agreement with Canada. In February, President Clinton traveled to Ottawa with Transportation Secretary Peña to sign a new open skies agreement with Canada, creating the largest single bilateral market in the world. The United States also signed open skies agreements with nine European countries.

Improved Management of International Flight Inspections. The FAA is responsible for inspecting ground-based air navigation facilities at 5,500 sites worldwide. Two overseas FAA offices involved in these inspections, one each in Frankfurt and Tokyo, were combined and relocated in Oklahoma City, saving $1.5 million a year.

TECHNICAL ASSISTANCE AND TRAINING

Cross-National Study of Air Traffic Controller Selection. The FAA is cooperating with Sweden, the Netherlands, and Australia in developing and validating selection instruments for air traffic controllers. Under the technical direction of CAMI, the projects are addressing questions of similarities and differences in controller ability requirements, the validity of different selection tests, and the measurement of controller job performance. The FAA provided the three countries with a new computer-administered test battery, with the understanding that all data will be shared with CAMI for research purposes. In 1995, Sweden completed initial evaluation testing of the battery on 200 incumbent controllers and 200 noncontrollers. The Netherlands also completed a first cycle of testing during the year.

Warsaw Airport Conference and Trade Show. The FAA participated in the October 15-17 workshop and trade show in Warsaw, Poland, focusing on new and emerging airport technologies in the 21st century, innovations in airport terminal design and construction, and financing. The 3-day conference, sponsored by the U.S. Trade and Development Agency (TDA), the Airport Consultants Council, and the Polish Airports State Enterprise, allowed FAA the opportunity to acquaint aviation officials from many nations with the technical assistance programs offered by the FAA which can be used to improve the safety and efficiency of national aviation infrastructures.

International Residencies in Aviation Medicine. Dr. Eduardo Mera Ospina, Medical Director of the Colombian National Police's Air Service, completed a 14-month exchange tour at CAMI, and Dr. Shu Hui Wang from the Institute of Aviation Medicine of the Civil Aviation Authority of China began his 1-year residency with CAMI. This program provides foreign officers the opportunity to work closely with FAA specialists in aviation medicine, and allows the FAA to expand its influence on the developing regulatory policies and procedures related to aviation medicine and human factors issues in other countries.

Airports Training for Aviation Officials of Brunei. The FAA developed and managed an airports training program for Brunei airport officials through a special grant of $240,000 provided by the TDA. Brunei officials have received both formal training and practical, on-site indoctrination at U.S. airports.

ATC Safety Training for Aviation Officials of Indonesia. Under a grant from TDA, the FAA has been operating and managing special ATC and aviation safety training programs for personnel of the Civil Aviation Authority of Indonesia. More than 75 Indonesian personnel were trained this past year under this $500,000 grant. In addition, the FAA is developing a reimbursable training program in aircraft manufacturing certification for the Indonesian DGCA.

ENVIRONMENTAL RESPONSIBILITY

Provide strong leadership to lessen the impact of aviation on the environment.

REDUCING AVIATION NOISE

Airline Noise Levels Continue to Drop. The level of noise at the Nation's airports and surrounding areas continues to decline as airlines take older, noisier airplanes out of service and replace them with newer, quieter ones. In a report to Congress, released in August 1995, the FAA documented that the number

of noisier aircraft declined from 2,372 in 1993 to 2,250 by the end of 1994.

During 1994, the proportion of quieter aircraft used by U.S. airlines increased from 62.4 percent of the fleet to 66.3 percent. The number of aircraft with reduced noise levels rose from 3,943 to 4,427 during the year. The improvement reflects compliance by the airlines with legislation passed in 1990 requiring that older, noisier (Stage 2) aircraft be replaced by quieter (Stage 3) aircraft by the year 2000.

Airport Noise Compatibility Planning Program. More than 200 airports are voluntarily participating in an FAA-supported noise compatibility planning program, which makes Federal funds available for airport noise mitigation projects. The Part 150 program assists airport operators in developing comprehensive noise compatible programs (NCP) to reduce noise and achieve compatible land uses in the areas surrounding their airports. To date, over 180 airports have FAA-approved NCP's, and the agency has issued more than $40 million in grants to develop the programs and at least $ 1,665 billiion for their implementation.

In FY 1995, FAA approved 19 NCP's, including seven revisions/updates of existing programs. Grants for approximately $1.7 million were awarded for noise compatibility planning and over $160 million for noise compatibility projects. It is expected that over the next several years, a major area of Part 150 activity will be the revision and updating of previously approved NCP's to reflect progress in phasing out large Stage 2 airplanes.

Tourist Flights Around Historic Sites and National Parks. An agreement was reached between the Federal Government and New York air tour operators which will enhance safety and reduce the impact of noise around the Statue of Liberty and Ellis Island. Under the agreement, which was signed June 26, 1995, tour operators will fly no closer than 500 feet from either Ellis or Liberty Islands. In addition, the FAA, the Interior Department's National Park Service, and the tour operators will work together to remedy future noise and safety problems if they arise.

The FAA and the Interior Department have worked together to reduce noise impacts from overflights of national parks since December 1993, when they formed an interagency working group focused on flights over the Grand Canyon. Several major

Air tour operators will now fly no closer than 500 feet from either Ellis or Liberty Island.

operators subsequently entered into a voluntary agreement to limit the number of flights over the canyon. In March 1994, the departments announced that they would work jointly to develop measures, both voluntary and regulatory, to reduce the impact of overflights at the Grand Canyon and other national parks. The agreement with the New York operators is a result of that initiative.

New Jersey Aircraft Noise Mitigation. The FAA will modify, in early 1996, current procedures to reduce aircraft noise in the Scotch Plains and Fanwood areas of Union County, New Jersey. The modification (designated as the Solberg Mitigation Proposal) will reduce noise for 18,755 residents who complained about increased noise levels over New Jersey since the 1987 realignment of east coast aircraft routes. This is approximately 40 percent of the 45,600 New Jersey residents who were affected by the realignment. There will be no comparable increase in noise for other New Jersey residents and no noise effects for residents living outside of New Jersey.

The agency worked closely with the public, over a 4-year period, in studying this issue. In preparing the EIS, the FAA considered testimony from more than 1,200 Federal, state, and local elected and appointed officials and citizens. Also considered were 2,800 comments received at more than 30 public hearings and meetings. The agency extended the comment period on both the November 1992 draft EIS and the September 1994 supplemental draft EIS several times to accommodate requests by Federal, state, and local officials, and the New Jersey Coalition Against Aircraft Noise. The FAA will continue to work with all parties involved to determine mitigation strategies for aircraft noise in the New York and New Jersey metropolitan area.

REDUCING EMISSIONS AND CONTAMINATION

Research on engine emissions. In June 1995, the FAA and NASA agreed to cooperate on a research program to reduce engine emissions. The objective is to provide the technical basis for certification standards and procedures for engine exhaust emissions which will be applicable to future subsonic turbine engines.

Controlling Adverse Effects of Deicing. Airplane deicing, an essential procedure for flight safety, can contaminate nearby land and surface waters. To help control such adverse effects, the FAA has approved projects for the construction of deicing facilities and storm water collection from passenger facility charges. Under the AIP, for example, over $4.7 million was spent in FY 1995 for deicing facilities at nine airports. Research is underway, in collaboration with NASA and the industry, to develop new techniques for deicing aircraft and new deicing and anti-deicing materials and procedures which may reduce environmental contamination.

New England Region Receives First FAA Environmental Award. A team, chaired by the Acting Regional Administrator and consisting of Airway Facilities and Public Affairs, was selected to receive the agency's first award for mitigation of environmental impacts. The team was responsible for replacing the North Truro, Massachusetts, long range radar facility. They worked closely with numerous state and Federal agencies as well as community groups to develop innovative approaches for minimizing impact to a national historic area. The award was presented at FAA headquarters on May 17.

ENVIRONMENTAL COMPLIANCE

Facility Assessments. The U.S. Army Corps of Engineers (USACE) began a 3-phase assessment of environmental and safety compliance at all FAA facilities in FY 1995. In Phase I, which was completed in FY 1995, 15 Airway Facilities Sectors and the Mike Monroney Aeronautical Center were assessed. Phase II assessments will include facilities in 13 states, the FAA Technical Center, and an update of safety and environmental compliance assessments in the Southern Region. Phase III will assess the remaining Airway Facilities Sectors (recently realigned as System Management Offices [SMO]).

The FAA completed preliminary assessments of all but three of the 65 sites on the Federal Facilities Docket. Preliminary assessments are the initial step in cleaning up the environmentally contaminated sites.

Energy Conservation. Energy analyses and surveys of selected FAA facilities were conducted to establish baseline data required by Federal regulations and to enable the agency to develop a 10-year energy and audit plan.

OCCUPATIONAL SAFETY AND HEALTH

Functions Consolidated. The agency's occupational health and safety functions were realigned in FY 1995 to consolidate policy functions in the Office of Environment and Energy and implementation functions in Airway Facilities. All occupational safety and health implementation functions in the regions and centers were consolidated in the respective Airway Facilities Divisions under a program manager for environment and safety.

In FY 1995, the regions and centers implemented comprehensive occupational safety and health programs to ensure the protection of FAA employees as well as compliance with Occupational Safety and Health Administration regulations. To further protect workers, minimize waste, and conserve energy, a program was also established to integrate safety, environmental, and energy conservation management requirements into new and existing national airspace systems and equipment. For new acquisitions, the requirements of Federal regulations are being integrated into the system and equipment designs through the life-cycle process. Existing systems are being reviewed on a priority basis to identify safety, environmental, and energy issues. An

informal integrated product team reporting to the Airway Facilities Director has been established to quickly resolve issues identified during the reviews.

FAA ORGANIZATION

Operate the FAA like a business and as a model Federal workplace.

OPERATING THE FAA LIKE A BUSINESS

Streamlining the Organization. The FAA showed progress in FY 1995 in meeting streamlining targets mandated by Executive Order 12839, recommended by the National Performance Review (NPR), and required by DOT. These reductions were achieved, without an adverse impact on safety, through buyouts, retirements, and attrition.

Through September 1995, agency full-time equivalency (FTE) had been reduced by 10 percent from the 1992 baseline; this compares with the FY 1999 target of 12 percent Targeted occupations and headquarters staff levels also reflect a decline. The ratio of nonsupervisory to supervisory employees improved from the 1992 baseline of 5.3 to 1 to 6.4 to 1.

Business Performance Plans. The FAA accomplished the first round of business planning in the spring of FY 1995 as part of the agency's reorganization along seven lines of business. The plans were used to help establish the lines of business and to promote internal communications. The second round of business planning now underway describes an organization's tactical objectives and specific work plans in relationship to the agency's strategic objectives and budget. The tactical plans bring together both ongoing programs and operations (such as controlling aircraft, certificating pilots, and issuing paychecks) and strategic changes designed to improve system safety and performance.

Performance Measures for the Air Traffic System. The FAA's primary performance measures for the air traffic system are accident rates and hours of delay *(See Chapter 2, Mission Performance Indicators).* In FY 1995, a corollary set of high-level measures was developed that includes predictability, flexibility, and access. These measures, when considered along with safety and delay, paint a more complete picture of overall system performance. The effort links together financial and performance management systems to help managers make informed decisions regarding the cost-effective operation of the system and the priority of future investments.

Airway Facilities (AF) Realignment. Following the successful completion of negotiations with the employee union, Professional Airways System Specialists (PASS) in December 1994, the Airway Facilities organization proceeded with implementation of its National Realignment Plan. The plan details how the organization will restructure and realign its services to better meet the challenges of new generations of electronic equipment and operational concepts.

At the request of Administrator Hinson, AF looked for opportunities to expedite implementation which was originally scheduled to occur between 1995 and 1998. By September 30, 1995, 75 AF sector offices had been consolidated into 32 SMO's. The original schedule projected only 18 SMO's in place by year's end. Only two sectors in Anchorage, Alaska, remain to be consolidated and this will occur in late 1995. Eight of the nine regions completed realignment of their regional offices. The last was scheduled for completed in November 1995.

AF has achieved an employee to supervisor ratio of approximately 10:1, up from 5:1 at the beginning of realignment. The outlook for achieving increases to 15:1 by 1998 are very optimistic. Due to the investment needed in FY 1995 for permanent change of station moves and other implementation expenses, actual savings will not be realized until the coming year. However, the consolidation of offices, management and administrative support functions will pay dividends quickly.

The six organization behavior teams (OBT) looking at new approaches to selecting, training, compensating, rewarding, and measuring performance of the AF work force continued their efforts. AF has completed a revised two-level performance appraisal system that is being negotiated with PASS at this time. A new awards and recognition system is nearing completion. The work of all the OBT's continues to draw national interest from other Government agencies interested in streamlining cumbersome and outdated procedures.

AF also chartered a business process engineering (BPE) team to seek more cost-effective methods to accomplish work and to relieve the administrative workload. This team is reviewing such areas as information flow, travel processes, issuance of directives, and timely facility restoration and will serve as a clearinghouse for all BPE efforts.

Twelve prototype self-managed teams (SMT) have completed the first year of a 2-year development period. Monitoring the success or failure of these teams continues to be a major effort in studying whether SMT's are a viable option for the AF organization.

While much of the structural realignment was well in place by the end of FY 1995, AF recognizes that much remains to complete the streamlining.

Airport Grants Process is Simplified. The Airport Planning and Development Process is simplifying the FAA's grants administration and project management function. The new process has three key goals: (1) to reduce many of FAA's responsibilities for the details of grants and project management while increasing the authority and control of airport sponsors and states; (2) to review and approve multi-year airport development programs rather than individual projects; and (3) to measure airport system performance and predict improvements with respect to various funding scenarios.

The FAA expects to reallocate as much as 40 percent of existing grants administration and project management resources to technical involvement in project formulation, consultation, coordination, and performance measurement functions. These newly available resources will concentrate on providing value- added services at the airport level in areas such as capacity improvement, new environment requirements, and new technologies (e.g., GPS). Implementation of the improved process is expected to be completed over a 3-year period beginning in FY 1996.

Human Factors Integration and Implementation. The FAA consolidated its human factors program to bring together research and applications activities. The reorganized Human Factors Division provides scientific and technical support for the civil aviation human factors research program and for human factors applications in acquisition, certification, regulation, and standards.

Flight Inspections and Procedures Centralized. Major changes were made in the Office of Aviation System Standards (AVN) organizational structure in FY 1995 to improve services and efficiency, as mandated by the NPR and FAR, Part 135. This resulted in a redistribution of flight inspection and procedures duties, as well as a restructured headquarters organization.

The development and maintenance of terminal and en route instrument flight procedures previously performed by eight flight inspection offices and two division level staffs were consolidated in AVN's new National Flight Procedures Office (NFPO). A Flight Inspection Central Operations Office (FICO) was created to provide centralized scheduling, coordination, dispatching, and flight following for the agency's worldwide flight inspection service to 60 foreign countries, the DOD, NAS providers, and users.

Overall, the number of Flight Inspection Area Offices was reduced from seven to four. Two International Flight Inspection Offices (IFIO) located overseas were eliminated, and one IFIO was established stateside. Three division level staffs were consolidated into one. An additional staff was combined with a division. Two divisions were abolished, and most of their functions and personnel were reassigned to other programs. Many branches throughout AVN were restructured as teams. Nine regional Flight Standard Service branches were added to AVN. This restructuring and streamlining resulted in a composite supervisory ratio of 11.5:1 compared to a FY 1994 baseline of 7.1:1.

AVN, whose largest customer is Airway Facilities, became an operating arm of the Air Traffic Service when the FAA developed its seven lines of business concept. AVN also became the first Federal entity to be issued operation specifications under FAR, Part 135, on April 19, 1995.

FAA Logistics Center (AML) Establishes Integrated Product Teams. The Logistics Center in Oklahoma City employs a diverse work force of over 650 people to plan and execute logistics functions and repair services which support more than 28,000 NAS facilities. In addition, the Logistics Center works with AVN to assure original equipment manufacturer certification compliance for aircraft parts on-hand and manages the national test equipment program for the agency.

AML is taking action to structure its organization along the FAA's seven lines of business, with a team approach designed to provide integrated product support. AML's flattening and streamlining efforts have reduced its supervisor to employee ratio to 1:15.

Flight Standards Resource Management Initiatives. The Southern Region's Flight Standards Division successfully corrected field office staffing imbalances and shortages in various types of inspector-related skills. By restructuring to a 10:1 employee to supervisor ratio and adhering to the National Staffing Standards, the division was able to effectively redeploy its resources, improving staff flow without the need for additional positions or funding.

FAA Academy. Overall, the technical training operation budget managed by the FAA Academy (AMA) decreased from $92 million to $81 million (13 percent). Personnel on-board dropped from 491 to 485 (1 percent).

Distance learning programs, which include CBI and interactive video teletraining (IVT), continued to expand. In CBI, 416 platforms and 79 sites were installed, bringing the system total to 1,450 platforms at about 1,000 sites. Network capacity was expanded in eight ARTCC's. Twenty-one new multimedia courses were added and over 28,000 CD-ROM's were shipped to CBI sites. Currently 44 multimedia CBI courses are offered.

In IVT, a digital satellite uplink and the automated instructor presentation system were installed; two courses were broadcast nationally; and negotiations with the Air National Guard were completed to share its downlinks with the FAA.

FAA's Interactive Video Teletraining studio at Mike Monroney Aeronautical Center, Oklahoma City.

CBI is also being introduced in other parts of the FAA. The Regulatory Standards and Compliance Division (AMA-200) acquired two CBI courses from the Boeing Aircraft Company without charge but valued at an estimated $.5 million.

The FAA continues to plan for and test IVT. A new cost-benefit study was commissioned to determine the cost savings of this technology to the FAA. Several successful demonstrations this year support further development and deployment of this approach. A new studio was completed, at relatively low cost, using all off-the-shelf equipment.

Center for Management Development (CMD). Implementing CMD's Business Plan with a focus on fee-for-service training highlighted FY 1995 with nearly $3 million of additional business transacted. Resident and nonresident student population increased from 4,000 in FY 1994 to 5,500 in FY 1995. The quality of instruction became apparent through benchmarking by such organizations as Arthur Anderson and CSX Corporation. An evaluation study commissioned by the FAA found that CMD was competitive with the best in the private sector, and that no significant efficiencies would be gained by consolidating CMD with the FAA Academy in Oklahoma City.

An FAA internal review of training addressed the fundamental question of how the agency can best invest in intellectual capital. This study has critically examined the internal management structure for training with a view towards decentralizing FAA training and placing FAA's lines of business in more direct control of their training. This process will emphasize a fee-for-service orientation which will allow for more flexibility and less bureaucracy in FAA training delivery.

CMD was accredited by the Southern Association of Colleges and Schools, and the American Council of Education approved credit for most of the Center's courses.

Staffing Standards. Staffing standards are mathematical models used to compute the number of personnel required to perform a job or set of tasks, including allowances for leave, travel, and indirect work. FAA uses staffing standards to determine national and regional staffing requirements for budget justification, resource allocation, planning, and evaluating the impact of proposed program changes and new equipment.

Heightened concern regarding appropriate staffing levels led to the establishment of the Staffing Standards Review Committee (SSRC) which is chaired by the FAA Deputy Administrator. The SSRC has reaffirmed use of the 90th percentile day to determine air traffic field facility staffing requirements; approved the controller availability factor; approved a new controller training pipeline model; investigated cognitive engineering methods; investigated the feasibility of using simulators for staffing standards development; revalidated the TRACON staffing standards, and oversaw a thorough, independent review of the TRACON staffing standards.

Airway Facilities Completes Second Year as GPRA Pilot Program. AF has completed its second year as a pilot program for performance measurement under the Government Performance and Results Act of 1993 (GPRA). During FY 1994, AF filed its FY 1996 Performance Plan and the first Performance Review covering FY 1994. The organization learned many lessons since the pilot program began in January 1994. The FY 1994 plan filed in March 1994 had no quantitative measurements since AF had just undergone a complete headquarters reorganization. The FY 1996 plan includes quantitative measures in NAS infrastructure performance improvement and reductions in frequency interference.

In FY 1995, emphasis was placed on AF's role as manager and custodian of the aeronautical frequency spectrum in the GPRA Performance Plan. The Federal Communication Commission formerly acted in this capacity. AF is working to preserve the needed aviation frequency spectrum for the aviation users' transition from the current ground-based systems to a space-based navigation system. The transition, when completed, will dramatically increase capacity into airports where it has been impractical to establish ILS's in the past.

AF submitted a nomination for a managerial flexibility waiver request under the GPRA provisions for a two-tiered performance appraisal system in March 1995. This type of system was approved for use governmentwide in September 1995 by the Office of Personnel Management. AF will be publishing a performance report, covering FY 1995, and updating the FY 1994 report in March 1996.

FAA Introduces Innovative Procurement Practices. In August 1995, the FAA awarded its first contract under the agency's pilot acquisition program to test innovative procurement practices that save the Government and industry time and money. The contract was awarded to Denro, Inc., for a commercial digital voice recorder system (DVRS). As the FAA's pilot program under the Federal Acquisition Streamlining Act, the purchase was exempt from several Government procurement regulations, and the FAA was allowed to evaluate products the way a private business would. Consequently, the contracting process took about 7 months rather than the typical 12 months.

The new acquisition approach for DVRS featured several alternative procurement practices. For example, FAA reviewed documentation of potential vendors to determine which commercial products to test and did not issue a formal RFP. No minimum requirements were specified, so the FAA was able to capture the best features of vendors' equipment. Paperwork was reduced, and there was more reliance on face-to-face communication, equipment demonstrations in an operational environment, and side-by-side comparative tests.

The planned STARS procurement and the recent award for automatio support are examples of two other major programs that reflect the new business-like approach.

In another new approach, the FAA awarded a contract titled "Certified Spare Parts Support" to the Glasco Company, Wichita, Kansas, to provide "just in time" spare parts support for the new Learjet Model 60 and Challenger Model 601-3R flight inspection aircraft. This approach requires the vendor to make spare parts available only when needed, within a specified time, rather than stocking, storing, and distributing spare parts at the Oklahoma City depot. The agency expects to save in excess of $30 million in the first 5-7 years of aircraft operations.

ANTICIPATE AND MEET CUSTOMER NEEDS

Air Traffic Service Plan. The FAA's Air Traffic (AAT) organization released its service plan following an intensive review of changing customer needs in a time of uncertainty throughout the aviation community. An inventory of needs was grouped into six comprehensive service categories, and AAT's current level of service was evaluated in terms of the level sought by the customers. Finally, action plans were presented which summarized what AAT was doing now or intends to do within the next 5 years, to

fulfill the service requirements of the industry. A short planning horizon ensures that many of the benefits of the plan for the aviation industry are realized in the near-term. One priority is the broadening of the national route program and the transition to the "free flight" concept.

Administrative Management Council (AMC). The AMC was established as a key forum for addressing administrative support issues with FAA's internal customers. In the spirit of putting customers first, the AMC provides a vehicle for asking customers what they want. This council is comprised of senior-level managers representing the major organizational elements of the agency and is empowered to make decisions regarding issues that fall under the authority of the Associate Administrator for Administration.

Customer Service Standards. In accordance with Executive Order 12862, Setting Customer Service Standards, the FAA published and distributed standards for four service areas during FY 1995. The service areas covered were weather and flight services (DUAT), Federal grants program, pilot and medical certification, and civil aviation security. Fourteen additional service areas were also identified for development of standards in FY 1996. In addition, an evaluation of customer satisfaction with standards published in FY 1994 on airmen certification was completed and forwarded to the NPR.

External Communications. The FAA conducted an aggressive outreach campaign to inform the public more effectively about agency policies and programs, including safety actions and the modernization of the NAS. The agency went on line with a "home page" on the World Wide Web, providing the public with news releases, speeches by FAA managers, biographical sketches of key officials, and a listing of telephone numbers. The main FAA web site also contains electronic links to a broad spectrum of acquisitions and rulemaking documents. To reach the home page, enter http://www.faa.gov.

Freedom of Information Requests. The FAA established and staffed a new office to improve efficiency in addressing inquiries submitted under the Freedom of Information Act. The agency issued a notice outlining its revised process for handling these requests and began a program to train headquarters and regional officials in the new procedures.

Partnership for Safety. The National Joint Steering Committee on Partnership for Safety (PFS) is responsible for implementing an employee involvement program for the 3,500 employees in the Flight Standards Service. The goal is to improve the quality of service delivered to Flight Standards' customers by making employees full partners in the design and improvement of work processes and quality of work life. The employee involvement process designed by the committee is customer sensitive, strives for continuous improvement, and creates an optimal management and union relationship. The importance of this work is magnified by the need to couple employee involvement with the agency's progress toward increasing supervisory ratios to a minimum of 10:1.

Western-Pacific has been selected as the lead region to develop a prototype implementation plan for PFS. This entails training and empowering 500 employees in 18 field locations throughout the region. Two training approaches have been developed—a cascade training system to deliver general awareness training and ad hoc training courses to teach facilitation, problem solving, and interest-based bargaining skills. Additionally, workshops have been designed to prepare managers and union representatives for their critical roles in overseeing the PFS process within their facilities. The implementation strategy minimizes costs by using employee involvement trainers from other agency organizations.

PFS will place more power in the hands of a work force trained in problem solving and decision making and focused on improving productivity, customer satisfaction, the work environment, and responsiveness to the public.

Eastern Region Establishes Umbrella Service Organization. The FAA's Eastern Region office has consolidated several of its functions into an "Aviation Information and Services Division" which reports to the Regional Administrator. The new division will focus on achieving the region's objectives through team work, customer satisfaction, and effective communications.

ENHANCE EFFICIENCY WITH COMPUTER AGE TOOLS

Management of Information Technology. The position of Chief Scientist for Software Engineering was established in 1995 to improve the software development processes of NAS suppliers and to reduce

life-cycle costs. Steps toward achieving these goals are already being taken by some early adopter programs in the Air Traffic Services organization and by the establishment of software capability evaluation training. The computer resource nucleus (CORN) program has converted DOT and FAA administrative applications to a single platform, completed all 101 scheduled data general (DG) conversions, and, during 1995, began executing operational and safety applications.

The Office of Information Technology (AIT) has moved ahead to develop and implement management information systems including the operational data management system (ODMS) and a new NAS management information system in support of research and acquisition activities. The FAA has made significant gains in electronic messaging by providing employees and their customers access to electronic mail and Internet services.

Agency business process improvement (BPI) standards and guidelines for conducting reengineering initiatives were published and BPI training was provided in 1995.

Phase II of the integrated personnel and payroll system (IPPS) was implemented. IPPS is designed to automate personnel requests, time and attendance, and training input processes throughout the DOT.

Efforts were begun to establish video teleconferencing services for 21 ARTCC's. The FAA Corporate IT Board reached decisions in a number of areas including prioritizing FAA business needs, identifying subject areas requiring additional attention, defining roles and responsibilities related to information technology, and improving reliability and timeliness of electronic mail. In addition, AIT continued its strategy for the prudent acquisition of microcomputer products and services by establishing a follow-on vehicle to the office automation technology and services program (OATS) which will assure best price and selection through multiple vendor contracts. Finally, in the area of network architecture, a post ADTN 2000 Internet protocol addressing plan was developed and implemented, and national naming and address standards for local area networks (LAN) and wide area networks were issued.

ADTN-2000 Wide Area Data Network Begins Operation. A contract to implement, operate, and maintain the ADTN-2000 network was awarded to Government Systems, Inc. (GSI) in September 1994, and the network was cut over to operational use on April 30, 1995. The ADTN-2000 is a wide area data network connecting most FAA facilities and provides several times the throughput capacity of the previous ADTN network which it replaced.

This new network uses Federal Telecommunications System 2000 (FTS2000) services for data transport and connectivity and state-of-the-art networking equipment. ADTN-2000 provides new services such as high speed interconnection of FAA regional backbone and LAN's, gateway access to Internet, Department of State, Coast Guard, FTS2000 packet switched services and INFONET international public data networks with improved access security. Video teleconferencing equipment and services including desktop video are also available from this contract. The contract provides economical migration to frame relay and asynchronous transfer mode (ATM) services when needed and incorporates technical flexibility to accommodate new technologies which will emerge during the potential 10-year life of the contract.

Automation in Human Resource Management (HRM). As a result of the HRM Business Plan, full-scale reengineering efforts are underway for two major HRM processes: filling positions and determining pay. SWIFT (selections within faster times) combines business process changes and enables automation to transform HR to a more customer-focused, streamlined, efficient organization. Key features include delegated authorities to managers (e.g., classification authority and making job offers), an automated library of standardized position descriptions, a centralized pool of applicants for FAA positions, computer-scanned application forms, and automated rating and ranking of eligible candidates.

Integrated Personnel and Payroll System (IPPS). The FAA implemented Phase I of the DOT IPPS in August 1995. Phase I is a management information reporting (MIR) tool that provides better access to personnel, payroll, and training data. MIR uses graphical user interface products to link Window-based software. Data can be accessed by using off-the-shelf report generators, word processing, spreadsheets, databases, and other tools that are available to the end user. Managers are able to use their desktop computers to produce reports, charts, or documents in a variety of styles.

Departmental Accounting and Financial Information System (DAFIS) Interface with Electronic Billing System. A new automated utility billing process is under development for FAA-wide use. The proposed system will interface DAFIS with an electronic billing system, which is being designed specifically for receiving and processing utility billings. As the principal test region, the Southwest Region continues to provide valuable research findings, which are helping to develop the national system.

Third Party Draft System (TPDS). Since all imprest funds offices in FAA will be closing by the end of June 1996, TPDS is being installed at hundreds of sites as an efficient means for making small purchases. TPDS operates in a client server environment, using an on-line exchange with DAFIS that eliminates much of the redundant data entry and table maintenance associated with many subsystems. The system issues a check from GELCO, the FAA's travel manager provider, to travelers and vendors on behalf of the Government. GELCO receives reimbursement from FAA for checks that have been cleared by the bank. TPDS also has an automated reconciliation process and statistical sampling. To date, all FAA regions, centers, and headquarters have implemented TPDS.

Travel Manager. Travel Manager is an off-the-shelf software system that prepares travel orders and advances, calculates travel claims, and provides the capability for electronic signatures. It also has a finance version that audits the claims and provides an automatic interface with an accounting system. Approximately 50 percent of FAA claims are prepared with travel manager. The FAA is in the process of creating a centralized contract with GELCO, the travel manager provider. An interface will be completed during FY 1996.

VISA Credit Card System. This system operates on a client server platform and represents the model for financial management (FM) systems of the future. It replaces the annotation of accounting classification on documents with a "point and click" feature on a personal computer. The FAA plans to build an ORACLE database for query purposes which uses electronic billings from the Rocky Mountain Bank uploaded to DAFIS. The system is operational in the Alaskan and Southwest Regions and Washington headquarters. Installation will be completed in all FAA regions by the end of FY 1996.

Southwest Region to Test Federal Express Electronic Billing System. Plans for a national Federal Express electronic billing system were set in motion with the Southwest Region selected as the lead test region. As project consultant, the region's research and findings from the system it developed in 1991 will serve as a model for the development of a national system. The new billing system is expected to be fully operational in the Southwest Region during the first quarter of FY 1996.

Employee Express. Employee Express permits employees to review and change certain discretionary payroll and personnel information. It has been piloted in a limited number of locations throughout the FAA and OST. The Human Resource Management Reengineering Implementation Team (RIT) and the Financial Review Division (ABA-100) have joined with seven other departments participating in this pilot project.

Employees in the Phase I pilot test can change five payroll actions: Federal tax withholding, direct deposit of net paycheck, home address, payroll allotments, and state tax withholding. Touch-tone telephones and touch-screen kiosks allow people to make these changes at their convenience, without having to submit paper forms.

System security has been reviewed closely. To access the system, employees in the pilot project must enter their social security number and personal identification numbers (PIN). The Office of Personnel Management (OPM) is maintaining the PIN system; FAA will have no information on the employees' PIN's.

Performance and Objective Workload Evaluation Research (POWER) System. The FAA's Civil Aeromedical Institute (CAMI) has developed a system that allows for the analysis of routinely collected ATC radar and computer data. "POWER" calculates several sets of numerical measures including airspace characteristics, sector dynamics, aircraft proximity, and sector activity. When complete, the system will provide an important tool for evaluating the effectiveness of new ATC systems by allowing the comparison of measures collected after deployment with baseline measures collected prior to deployment. Plans call for using the system to assess the impact of new equipment and procedures on controller task load and performance.

Automated Procedures for Airman Certification and Rating Applications (ACRA). ACRA is a microcomputer program that processes applications for airman certification ratings. The program is being developed by the Office of Information Services (AMI) under the direction of the Office of Flight Standards (AFS). ACRA performs reliable and consistent error-checking and validating of required certification information using FAR's programmed into the application; produces certification documents such as the temporary certificate, notice of disapproval; and an electronic version of FAA Form 8710-1, Airman Certification and/or Rating Application.

Instrument Approach Procedures Automation (IAPA) System Enhanced. The Office of Aviation Standards (AVN) successfully concluded a 5-year effort to automate the development of terminal instrument approach procedures (TERPS). Phase II of the project moved the TERPS automation from a mainframe computer setting limited to 48 users to an electronically distributed work station environment. The enhanced system automates the time-consuming and painstaking attention to details and rules necessary to develop, review, store, and transmit all U.S. civil and Army standard instrument approach procedures (SIAP). T-squares, triangles, and calculators used in the manual system have been replaced with a sleek electronic means of developing SIAP's. The new process has enabled AVN to reduce SIAP development time by 25 to 50 percent.

Prototype for NAS Infrastructure Management Systems (NIMS). The Airway Facilities concept of operation for the future relies on a NIMS as its technological underpinning. NIMS will support advanced command and control capabilities and will acquire, process, distribute, and present to the AF workforce the information needed to conduct business more effectively. Information as diverse as customer service availability, system status and control, and parts failure rates will be available wherever and whenever it is needed.

In FY 1995, the NAS Operations Program Office awarded a contract to deploy prototype NIMS capabilities at locations in each region. This effort will provide near-term management capabilities through a "build a little, test a little, use a little" approach. Through the use of commercially available techniques and industry standards, AF is getting an early start on implementing and refining its future operations concept.

Within 6 months after the contract award, prototype systems were delivered to the FAA Technical Center Human Factors Laboratory, the National Operations Control Center in Herndon, Virginia, and the Salt Lake City prototype Operations Control Center. Additional systems will be deployed during FY 1996.

TRANSFORMING FAA INTO A MODEL WORKPLACE

Workplace Diversity. Administrator Hinson appointed a Senior Executive-level Diversity Advocate within the Office of Civil Rights to renew the agency's emphasis on diversity. With new leadership and direction, the agency has made progress towards creating a more hospitable workplace, a representative workforce, and training for diversity awareness.

Of 748 people hired by the FAA through August 31, 1995, 361 (48.3 percent) were women, minorities, and people with disabilities, of which 204 (27.3 percent) were minorities. Of 6,843 FAA employees promoted over the same period, 3,450 (50.4 percent) were women, minorities, and people with disabilities, of which 1668 (24.4 percent) were minorities. Of 68,686 employee training incidents during this period, 30,466 (44.4 percent) were women, minorities, and people with disabilities, of which 15,800 (23.0 percent) were minorities.

The Human Resource organization has begun to develop a standardized agency diversity training program. The Office of Civil Rights has been working closely with Human Resources in determining curriculum requirements. There has been full participation by the unions and employee associations. Pending the completion of the new program, the regions are continuing diversity training under the current training guidelines.

The Office of Civil Rights, through a Senior Management Work Team, has drafted an agency Model Work Environment Plan, which will be a key leadership tool for FY 1996.

Dispute Resolution and Complaint Mediation. A major FY 1995 initiative was to train Equal Employment Opportunity (EEO) Counselors consistently throughout the FAA workforce. The FAA has saved approximately $40,000 by developing and conducting an in-house course for training

employees to be EEO Counselors. Over 170 employees have been trained to be collateral duty EEO Counselors. The Department, as well as others, has participated in this training. From December 1994 to July 1995, the FAA detailed 26 employees to DOT to serve as full-time investigators to assist in the backlog of formal complaints.

Another method of resolving complaints is the Alternative Dispute Resolution (ADR) Program. The FAA was the major participant in the DOT's pilot ADR Program. The program provides complainants the opportunity to seek resolution of problems with the help of neutral mediators. Five FAA employees served as mediators during the pilot program which ended in August. In FY 1996, the FAA will have a national ADR program manager, and an agency program will be developed.

Internal Communications. As part of its effort to improve internal communications, the FAA encouraged the exchange of information among its component organizations as well as between managers and employees. The Intercom, a weekly publication on agency activities, was placed on the Internet to make it more accessible to both employees and the public. The FAA Administrator and other top executives continued their direct communication with employees through such means as luncheon meetings and interactive satellite broadcasts. Quarterly "flow down" meetings remained an effective method of keeping managers abreast of developments across the whole spectrum of FAA functions.

Child Care Centers. During FY 1995, Western-Pacific Region has worked on completing the Los Angeles ARTCC child care facility design. Construction is expected to start by February 1996. A survey was sent out to assess the need for a child care facility at the planned Northern California Metroplex Control Facility.

A groundbreaking ceremony was held August 9, 1995, at the future site of the General Services Administration/FAA Western-Pacific Regional Office Child Care Center. The "double-mini-center" child care facility will accommodate 24 children; 12 in each site. The two separate mini-center concept is an innovative approach to GSA child care facilities.

On July 31, 1995, Houston ARTCC began operating a child care center under the management of First Wings, Inc. This 6,800-square-foot facility and associated playgrounds, designed to accommodate 100 children, was made possible by a Federal grant supporting the initial establishment of four child care facilities. The center boasts a top-notch staff and a variety of creative learning tools. Opening this facility represents the culmination of 18 months of construction, with the dedication of this center scheduled to occur in early spring 1996. During the year, other child care centers opened in the Denver and Memphis ARTCC's and Northwest Mountain Regional headquarters.

Mentoring Programs. The Southwest Region has established a mentoring program to enhance personal growth, skills, and knowledge for individuals traditionally excluded from informal mentoring. Each participant in the mentoring program attends an orientation course for one day. Presently, 112 employees are participating in the program. Several of these employees have been able to participate in work details and reassignments which lead to promotion. The Eastern Region developed a similar program with 115 participants.

Eastern Region Develops Human Resource Specialty Training. The Eastern Region conducted FAA-wide training for the Human Relations management staff. Classes in basic staffing were held in Atlanta and Fort Worth, while classes in basic classification were conducted in Atlanta and Chicago. Training in pay policy was conducted in all regions, as was a series of 1-day retirement briefings.

Sexual Harassment Survey. CAMI, in conjunction with a team of managers, employees, and union representatives from the Southern Region, developed a comprehensive survey to address the issue of sexual harassment. The survey's purpose is to assess the effectiveness of the region's current efforts to reduce sexual harassment. The survey was entitled "Sexual Harassment in the Workplace" and has been distributed to all FAA employees in the Southern Region.

Center for Management Development (CMD) Offers Union/Management "Partnership" Training. The Southern Region's Flight Standards Division actively supported the partnership training program conducted by the (CMD) for facility managers and PASS. Once the participants return to their facilities, continued team effort is encouraged to reinforce the learning experience at CMD and to serve as positive role models to other employees.

FAA Substance Abuse Prevention Programs. The Office of Aviation Medicine staff members developed supervisory training materials regarding the implementation of alcohol testing of FAA safety-sensitive employees.

Bloodborne Pathogens Training. The Office of Aviation Medicine took part in the training of more than 2,000 Aviation Safety Inspectors on bloodborne pathogens The training was mandated by the Occupational Standards and Health Act.

Alaskan Region Rotational Plan. The Alaskan Region has encountered chronic recruitment and staffing retention problems at its remote air traffic facilities. Harsh climates, limited personal services, and substandard living conditions have made the staffing of these remote facilities extremely difficult. The FY 1995 DOT Appropriations Act approved $4 million for the Alaskan Region Rotational Staffing Plan. This plan, begun in January 1995, allows employees and their families to reside in the larger metropolitan areas of Alaska (Anchorage, Fairbanks, and Kenai). Rotational crews then travel out to work at air traffic facilities located in the remote bush areas of Alaska.

Alaska Employee Housing Program. Numerous accomplishments throughout the year included the award of a major construction contract for new housing in King Salmon; purchase of a bed and breakfast in Bethel to serve as billets for transient personnel and rotational crews; purchase of a house in Dillingham; leasing of temporary employee housing in Bethel to accommodate new construction; agreements with the cities of Bethel and Cold Bay to improve the sewer and water systems; and completion of the design of new housing in Cold Bay.

New Building Consolidates Atlanta Area Field Offices/Accounting Personnel. The Southern Region took occupancy of the new campus building adjacent to the regional office in December 1994. The new 51,800-square-foot building houses 350 employees, including the region's accounting staff and personnel from several field offices in the Atlanta area. The project was a combined effort of the General Services Administration and the FAA's Southern Region. The facility was completed on schedule and within budget.

Aviation Education at the State Level. The FAA Strategic Plan for Aviation Education, "Looking Towards The Future: Linking with the States," redefines the focus of aviation education and aligns the mission to complement the strategic plans of DOT and FAA. The plan also outlines the steps necessary to link the operational elements of the agency's aviation education program with the state transportation and aviation education initiatives.

Outreach to Minority Institutions. Administrator Hinson was a featured speaker at the annual Historically Black Colleges and Universities (HBCU) Symposium at Tuskeegee University in May. Ms. Margaret Powell, FAA HBCU Program Manager, and the aviation research grants program office engaged in outreach efforts to institutions serving minority students by presenting program details and assistance at national conferences. Presentations and workshops on the FAA Research Grants Program were given at the HBCU Symposium in May and at the FAA-Hispanic Association of Colleges and Universities Partnership Program, San Juan Puerto Rico in June. Dr. Fred Snyder, Grants Program Manager, represented the Office of Aviation Research at the HBCU President's meeting in August at Hilton Head, South Carolina.

FAA/Adelphi University Establish Statewide Aerospace Education Council. The FAA and Adelphi University have established a new council to improve the quality of aerospace education in New York State. The New York State Aerospace Education Council's first meeting was attended by 75 members representing a cross section of the aviation community: the FAA, the Port Authority of New York and New Jersey, the Civil Air Patrol, educational institutions, industry, research organizations, and other Federal, state and local agencies. Plans were drawn up for a wide range of aviation education projects.

FAA Employee Forms "Wings of Wonder" Nonprofit Foundation. Jay Nelson, Oklahoma City Aviation Safety Program Manager (ASPM), formed a nonprofit foundation for aviation in December 1989. The foundation promotes aviation education in the elementary schools of Oklahoma in kindergarten through third-grade classes. The foundation has encouraged and been responsible for over 100 teachers attending summer aviation workshops operated by Oklahoma State University.

Program volunteers built and donated a fully mobile flight simulator to a school system, then became active participants in school activities. All flight simulator parts were donated through the Thomas

Cox Allen Foundation, a not-for-profit Oklahoma organization named for the late pioneer aviator—the first black pilot to fly from coast to coast. Program volunteers from diverse backgrounds assist classroom teachers by serving as role models and talking with students on career day.

Since program implementation, over 48,000 children have received one-on-one aviation education, without any cost to schools or to the state. Participating teachers have stated that the children exposed to this program are scoring 18 to 20 points above the national average on Scholastic Aptitude Tests (SAT). The Oklahoma program served as a trailblazer and catalyst in helping other states implement similar activities. As further evidence of the program's success, plans are underway to include eighth-grade students and to create a teachers' workshop on aviation. In addition, the University of Oklahoma has asked to join in the cooperative effort.

EXPO 95. New England's largest aviation career exposition was hosted at United Airlines' hangar at Boston's Logan Airport. EXPO 95 was jointly sponsored by FAA, Massport, United Airlines, and Masspep. The day opened with a welcome by the Acting Regional Administrator followed by a presentation from pilot and news anchor Chet Curtis. The day-long event featured over 50 presenters including the regional offices of Aviation Education, Flight Standards, Airway Facilities, Air Traffic, Security, and Medicine. Numerous airplane and helicopter fly-ins added to the excitement. Over 2,000 students representing 35 Boston urban high schools attended.

FAA Assistance Following the Oklahoma City Bombing. The Mike Monroney Aeronautical Center (MMAC) supported recovery efforts in the aftermath of the bombing of the Federal building in Oklahoma City on April 19, 1995. MMAC provided office space, copying facilities, telecommunications equipment, furniture, and office supplies to a number of Federal agencies displaced by the explosion. The Federal Emergency Management Agency (FEMA) was loaned a van and driver, CAMI provided medical supplies, and several employees assisted with site clean-up. Over 300 MMAC employees took part in volunteer efforts organized by the community, and the FAA Employees Credit Union collected more than $5,000 in donations for the Red Cross.

FAA Assistance Following Hurricane Opal. In response to Hurricane Opal, the FAA's Southwest Region deployed a team to Florida to supplement staff at the FEMA Disaster Field Office (DFO). The Southwest Region also staffed the Regional Operations Center (ROC) at FEMA Region Six at Denton, Texas, for the duration of Hurricane Opal's impact on Louisiana.

AWARDS AND RECOGNITION

Fredricksburg, Texas, Teenager Earns DOT Heroism Award. Fourteen-year-old Jodi Itri, who saved her father's life when he crashed his home-built Scorpion helicopter in the family's backyard, has been awarded DOT's highest recognition for heroism. After calling 911, Jodi crawled underneath rotating blades, over the legs of her semiconscious father, and into the cabin area to shut off the helicopter. Jodi then held her father until help arrived. Jerry Virden, Aviation Safety Inspector, San Antonio Flight

The FAA honors its participants in the DOT Secretary's 28th Annual Awards program.

Standards District Office, investigated the crash and nominated Jodi for the award.

FAA Team Receives Vice President Gore's Hammer Award. The Grants Quality Action Team within the FAA's Research Division received Vice President Gore's National Performance Review Hammer Award which recognizes putting customers first, cutting red tape, and empowering employees. The team reduced the hours required to process a research grant by more than 95 percent.

FAA Work and Family Program Recognized. The FAA received the 1995 Office of Personnel Management (OPM) Director's Award for its outstanding accomplishments in enabling its employees to balance work and family obligations. The award recognizes innovative and effective work family programs which may serve as models for other Federal agencies. The FAA was cited for its alternative work schedules, voluntary leave transfer program, child care, dependent care seminars, employee assistance program, human resource management information center, part-time employment, and telecommuting. The FAA was also cited for its effort to tailor its program to the special needs of a diverse work force.

Airway Facilities Sector of the Year Award. The National 1994 Sector of the Year Award was awarded to the Golden Gate, California, Airway Facilities Sector.

Flight Standards Field Office Award. The National 1994 Flight Standards Field Office Award was awarded to the Reno, Nevada, Flight Standards District Office.

Terminal Facility of the Year Award. The National 1994 Terminal Facility of the Year, Level I-II, was awarded to the Prescott, Arizona, Air Traffic Control Tower.

Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

Subject: INFORMATION: Report on the Federal Aviation Administration's Fiscal Year 1995 Financial Statement
Report Number AD-FA-6-005

Date: March 1, 1996

Reply To
Attn Of: Lauro:X66767

From: A. Mary Schiavo
Inspector General

To: The Secretary
Thru: The Deputy Secretary

In accordance with the Chief Financial Officers Act of 1990, I respectfully submit the Office of Inspector General's (OIG) audit report on the Federal Aviation Administration's (FAA) Financial Statement for the fiscal year (FY) ended September 30, 1995. The other items making up FAA's FY 1995 Financial Statement package include two Combining Principal Statements (one for Financial Position and the other for Operations) and associated notes, and these items accompany the report. FAA is preparing and will issue, under separate cover, its annual report for FY 1995 containing the Overview and Supplemental Financial and Program Information sections which normally accompany the Combining Principal Statements. FAA plans to incorporate the financial statement package into their annual report.

The report on the financial statement audit is the responsibility of the OIG. All other information in the Combining Principal Statements and accompanying notes is the responsibility of FAA.

The FY 1995 financial statement addresses all FAA programs and activities--including trust, revolving, loan guarantee, and general operations funds. Accordingly, our audit scope this year likewise included all FAA programs and activities. However, our audit work associated with testing the adequacy of FAA's internal control structure and compliance with applicable laws and regulations is still in process. We are combining our internal control and compliance assessments and testing for FY 1995 with our audit work for FY 1996 in these two areas to help ensure appropriate audit coverage at FAA in light of the Department of Transportation's transition to a consolidated Departmentwide financial statement for FY 1996. Under this approach, we plan to advise FAA management of any reportable problem areas

(along with associated recommendations) as we identify them, and then issue a summary report when our internal control and compliance work is complete.

If I can answer any questions or be of any further assistance, please feel free to call me on (202) 366-1959 or my Deputy, Mario A. Lauro, Jr., on (202) 366-6767.

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DEPARTMENT OF TRANSPORTATION INSPECTOR GENERAL'S REPORT ON THE FEDERAL AVIATION ADMINISTRATION'S FISCAL YEAR 1995 FINANCIAL STATEMENT

To the Federal Aviation Administrator

The Department of Transportation (DOT) Office of Inspector General (OIG) conducted an audit of the Federal Aviation Administration's (FAA) Financial Statement for the fiscal year (FY) ended September 30, 1995. The audit was performed in accordance with Generally Accepted Government Auditing Standards issued by the Comptroller General of the United States and Office of Management and Budget (OMB) Bulletin No. 93-06, entitled "Audit Requirements for Federal Financial Statements." The audit objectives were to determine whether (i) the Combining Statement of Financial Position presented fairly, in all material respects, FAA's financial position in accordance with OMB Bulletin No. 94-01, entitled "Form and Content of Agency Financial Statements;" (ii) FAA had in place an adequate internal accounting and administrative control structure that provided reasonable assurance of achieving established internal control objectives; (iii) FAA complied with laws and regulations which (a) could have a direct and material effect on the financial statement or (b) were specified by OMB and/or FAA; (iv) the information in, and manner of presentation of, the Overview and the Supplemental Financial and Program Information sections of FAA's FY 1995 Annual Report were materially consistent with the information in the Combining Statement of Financial Position; and (v) FAA had adequate policies and procedures in place to provide reasonable assurance of achieving its internal accounting and administrative control objectives regarding the existence and completeness assertions for performance measures.

For FY 1995, FAA prepared only the Combining Statements of Financial Position and Operations[1]. In May 1995, the Department requested a waiver from specific requirements prescribed by OMB Bulletin No. 94-01 regarding preparation of the Statement of Cash Flows and the Statement of Budgetary

[1]Both statements reflect all FAA funds, activities, and operations.

Resources and Actual Expenses. OMB approved the waiver and FAA did not prepare these two statements.

The financial statement audit process is intended to foster a collegial and cooperative working relationship between auditors and accounting personnel, and this was accomplished during the audit. Using the results of the audit field work, FAA accounting personnel significantly enhanced the precision and comprehensiveness of the information reported in the FY 1995 financial statement. The resulting modifications incorporated into the final version of the financial statement included $886.9 million in line item adjustments, $26.5 million in line item reclassifications[2], and additional disclosures collectively valued at $7.2 million in the "Notes to the Financial Statement." We calculated the amounts for the line item adjustments and reclassifications using the value of only one side of each accounting adjustment--i.e., either debit or credit.

This report presents our disclaimer of opinion on FAA's Combining Statement of Financial Position as of September 30, 1995. Since we disclaimed an opinion on the Combining Statement of Financial Position, we were unable to accomplish our fourth objective stated above. We plan to issue at a later date our findings, along with corresponding recommendations and management comments, on FAA's associated system of internal controls (the focus of our second and fifth audit objectives) and the agency's compliance with applicable laws and regulations (the focus of our third audit objective).

A. DISCLAIMER OF OPINION

In accordance with the Chief Financial Officers (CFO) Act of 1990, the OIG audited FAA's Combining Statement of Financial Position as of September 30, 1995. The Combining Statement of Financial Position is the responsibility of FAA. The OIG's responsibility is to express an opinion on this statement based on the audit.

The auditing standards under which we conducted our work require us to plan and perform the audit to obtain reasonable assurance about whether the Combining Statement of Financial Position and Combining Statement of Operations are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement

[2]We defined reclassification as movement of all or a portion of a reported amount from one line item to another within the same section of the financial statement--e.g. asset to asset, liability to liability, etc.

presentation. Our audit work was limited to the Combining Statement of Financial Position because the material line item balances for "Operating Materials and Supplies" and "Property and Equipment" at October 1, 1994, could not be validated, and those balances impacted the values shown for two (i.e., "Total Expenses" and "Net Position, Ending Balance") of the three major sections making up the Combining Statement of Operations for FY 1995. In our view, the audit work we performed provides a reasonable basis for our disclaimer of opinion.

FAA had not reconciled general ledger balances for several material accounts to subsidiary records as of September 30, 1995, and detail records supporting these balances were generally not available to substantiate corresponding amounts reported on the Combining Statement of Financial Position. These accounts included (i) Purchases-in-Transit, (ii) Work-in-Process, (iii) Personal Property, and (iv) Buildings and Other Structures and Facilities. The lack of records prevented us from applying other auditing procedures to determine whether the balances reported for the corresponding material line items were fairly presented.

In addition, FAA had expensed the full costs of acquiring major assets, rather than capitalizing the appropriate portions of those costs. By the end of our field work, however, FAA had made progress in correcting one of the more significant instances of this problem. In February 1996, FAA completed an analysis of software development costs for the Advanced Automation System (AAS) and concluded $326 million of the $772 million previously expended for AAS should be capitalized ($224.6 million for software and $101.4 million for hardware). In addition, FAA capitalized another $31.5 million representing the costs of constructing a facility for the AAS program at FAA's Technical Center located in Atlantic City, New Jersey. The financial statement was revised accordingly to reflect the $357.5 million as assets on the Combining Statement of Financial Position. We did not have time to review FAA's capitalization methodology for discussion in this report, but will review their methodology and analysis as part of our continuing internal control work.

At the time of our work, the agency had not yet determined all the specific adjustments needed to correct these recording errors, but in those cases made appropriate note disclosures. Furthermore, as of February 28, 1996, we still had not received the legal representation letter due from FAA. Since this representation letter is required by auditing standards, its absence constituted an additional audit scope limitation.

As a result of the reconciliation, documentation, and capitalization problems noted above[3], the scope of our work was not sufficient to enable us to express, and we do not express, an opinion on the Combining Statement of Financial Position as of September 30, 1995. In turn, our inability to express an opinion prevented us from accomplishing our fourth audit objective.

B. INTERNAL CONTROL STRUCTURE/COMPLIANCE WITH LAWS AND REGULATIONS

OMB guidance for implementing the audit provisions of the CFO Act requires the auditors to assess the reporting entity's internal control structure and its compliance with applicable laws and regulations. FAA management is responsible for establishing and maintaining an internal control structure. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control mechanisms, policies, and procedures. Compliance with applicable laws and regulations is also the responsibility of FAA management.

We performed preliminary assessment work on FAA's internal control structure, but decided for two reasons to defer further work in this area, along with our planned assessment of the agency's compliance with applicable laws and regulations. First, since FAA had not completed corrective actions on all previously identified material internal control weaknesses, further assessment of the issues associated with those weaknesses would have been premature. More importantly, however, we felt DOT's transition to a consolidated Departmentwide financial statement for FY 1996 needed to be factored into our approach for performing internal control and compliance work for FY 1995 audit cycle. In our view, this was needed to determine the significance, impact, and relative correction priority of any internal control and compliance problems identified by that work. The OIG's work for the FY 1996 audit cycle will obviously focus on the consolidated Departmentwide financial statement, precluding the performance of audit work on any stand-alone financial statements prepared for FAA or other individual reporting entities. For this reason, internal control and compliance problems identified only in terms of FAA's FY 1995 financial statement may or may not be significant enough to impact material line

[3]Each of these problems had been previously identified and was discussed in our reports for the prior two audit cycles: (i) audit of the Airport and Airway Trust Fund portion of FAA's FY 1993 financial statement (Report Nos. AD-FA-4-012 and AD-FA-5-005) and (ii) audit of FAA's FY 1994 financial statement (Report No. AD-FA-5-009). FAA's corrective actions to resolve these internal control problems are still in process, with some corrective actions not scheduled for completion until FY 1997.

items on the consolidated DOT-wide financial statement for FY 1996. Accordingly, to maximize the effectiveness of audit resources, we decided to combine our internal control and compliance work at FAA for both the FY 1995 and FY 1996 audit cycles. Under this approach, we plan to advise FAA management of any reportable problem areas (along with associated recommendations) as we identify them, with issuance of a summary report to follow when our internal controls and compliance work is complete.

The preliminary internal controls work completed thus far identified one new material internal control weakness associated with improper posting of transactions to an asset clearing account (i.e., General Ledger account 19FA). As a result, the asset portion of FAA's draft Combining Statement of Financial Position reflected a negative balance of $80.3 million under the Facilities and Equipment column and a negative balance of $76.8 million under the consolidated total column. FAA researched the transactions and took appropriate action to correct the statement.

This report is intended for the information of the Congress, OMB, and those with FAA management responsibility. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Raymond J. DeCarli
Assistant Inspector General for Auditing

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

	AIRPORT AND AIRWAY TRUST FUND (CORPUS)	TRUST FUND GRANTS-IN-AID TO AIRPORTS	TRUST FUND FACILITIES & EQUIPMENT	TRUST FUND RESEARCH, ENGR & DEVEL
Assets				
Entity Assets:				
Intragovernmental Assets:				
Fund Balance With Treasury (Note 2)	$ 1	$ 70,262	$ 132,467	$ 8,562
Investments (Note 4)	6,766,128			
Accounts Receivable, Net (Note 5)		481,930	3,686,452	276,317
Interest Receivable	185,284			
Advance and Prepayments			119,339	6,909
Other Intragovernmental (Note 6)			24,078	12
Governmental Assets:				
Accounts Receivable, Net (Note 5)		300	10,574	92
Credit Program Receivables and Related Foreclosed Property, Net (Note 7)				
Advances and Prepayments			45,843	94
Other Governmental			5,628	
Cash and Other Monetary Assets (Note 3)				
Operating Materials and Supplies, Net (Note 8)			1,039,636	
Property and Equipment, Net (Note 9)			7,740,247	
Total Entity Assets	$ 6,951,413	$ 552,492	$ 12,804,260	$ 291,986
Total Assets	$ 6,951,413	$ 552,492	$ 12,804,260	$ 291,986

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

	AVIATION INSURANCE REVOLVING	AIRCRAFT PURCHASE LOAN GUAR	OPERATIONS	OTHER FUNDS	Consolidated Total
	$ 399	$ 5	$ 633,525	$ 8,502	$ 853,723
	57,677				6,823,805
			17,529	8,556	4,470,784
					185,284
			112,569		238,817
			3,472	(12)	27,550
			11,688	3,575	26,229
				1,266	1,266
			3,494		49,431
					5,628
			1,455		1,455
			355,534		1,395,170
			217,038		7,957,285
	$ 58,076	$ 5	$ 1,356,305	$ 21,889	$ 22,036,426
	$ 58,076	$ 5	$ 1,356,305	$ 21,889	$ 22,036,426

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

	AIRPORT AND AIRWAY TRUST FUND (CORPUS)	TRUST FUND GRANTS-IN-AID TO AIRPORTS	TRUST FUND FACILITIES & EQUIPMENT	TRUST FUND RESEARCH, ENGR & DEVEL
Liabilities				
Liabilities Covered by Budgetary Resources:				
Intragovernmental Liabilities:				
Accounts Payable	$	$	$ 26,946	$ 2,392
Interest Payable				
Debt (Note 10)				
Other Intragovernmental Liabilities (Note 11)			27,929	2,267
Governmental Liabilities:				
Accounts Payable		23,647	197,357	8,462
Other Governmental Liabilities (Note 11)			5,908	1,883
Total Liabilities Covered by Budgetary Resources	$	$ 23,647	$ 258,142	$ 15,004
Liabilities not Covered by Budgetary Resources:				
Intragovernmental Liabilities:				
Other Intragovernmental Liabilities (Note 11)	$	$	$	$
Governmental Liabilities:				
Lease Liabilities (Note 12)			118,941	
Pensions and Other Actuarial Liabilities (Note 13)				
Other Governmental Liabilities (Note 11)			574,900	
Total Liabilities not Covered by Budgetary Resources	$	$	$ 693,841	$
Total Liabilities	$	$ 23,647	$ 951,983	$ 15,004

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

AVIATION INSURANCE REVOLVING	AIRCRAFT PURCHASE LOAN GUAR	OPERATIONS	OTHER FUNDS	Consolidated Total
$	$	$ 40,832	$ 625	$ 70,795
	1			1
	21			21
		6,338	6,092	42,626
107		139,649	7,346	376,568
11		129,132	9,914	146,848
$ 118	$ 22	$ 315,950	$ 23,978	$ 636,861
$	$	$ 156,925	$	$ 156,925
				118,941
		736,148		736,148
10		277,248		852,158
$ 10	$	$ 1,170,320	$	$ 1,864,171
$ 128	$ 22	$ 1,486,270	$ 23,978	$ 2,501,032

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

	AIRPORT AND AIRWAY TRUST FUND (CORPUS)	TRUST FUND GRANTS-IN-AID TO AIRPORTS	TRUST FUND FACILITIES & EQUIPMENT	TRUST FUND RESEARCH, ENGR & DEVEL
Net Position				
Balances:				
Unexpended Appropriations (Note 14)	$	$ 2,294,961	$ 1,583,459	$ 145,686
Invested Capital (Note 14)	11,330,528	2,749	10,908,705	126,775
Cumulative Results of Operations (Note 14)			43,600	4,520
Other (Note 14)	(4,379,115)	(117,706)	10,352	
Future Funding Requirements (Note 14)		(1,651,158)	(693,842)	
Total Net Position (Note 14)	$ 6,951,413	$ 528,845	$ 11,852,277	$ 276,982
Total Liabilities and Net Position	$ 6,951,413	$ 552,492	$ 12,804,260	$ 291,986

The accompanying notes are an integral part of these statements

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 1995
(Dollars in Thousands)

	AVIATION INSURANCE REVOLVING	AIRCRAFT PURCHASE LOAN GUAR	OPERATIONS	OTHER FUNDS	Consolidated Total
	$ (1,624)	$ (1)	$ 189,538	$ (750)	$ 4,211,269
		(16)	552,321	(1,369)	22,919,693
	59,583		298,496	30	406,229
					(4,486,469)
	(10)		(1,170,320)		(3,515,330)
	$ 57,948	$ (17)	$ (129,965)	$ (2,089)	$ 19,535,394
	$ 58,076	$ 5	$ 1,356,305	$ 21,889	$ 22,036,426

The accompanying notes are an integral part of these statements

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF OPERATIONS
FOR THE PERIOD ENDED SEPTEMBER 30, 1995
(Dollars in Thousands)

	AIRPORT AND AIRWAY TRUST FUND (CORPUS)	TRUST FUND GRANTS-IN-AID TO AIRPORTS	TRUST FUND FACILITIES & EQUIPMENT	TRUST FUND RESEARCH, ENGR & DEVEL
Revenues and Financing Sources				
Appropriated Capital Used	$	$ 1,833,511	$ 1,887,708	$ 243,659
Revenues from Sales of Goods and Services:				
To the Public			9,081	3
Intragovernmental			70,966	1,481
Interest and Penalties, Non-Federal				
Interest, Federal	763,953			
Taxes (Note 15)	5,572,641			
Other Revenues and Financing Sources (Note 16)			290,322	
Less: Taxes and Receipts Transferred to the Treasury or Other Agencies (Note 16)	(7,391,244)			
Total Revenues and Financing Sources	$ (1,054,649)	$ 1,833,511	$ 2,258,077	$ 245,142
Expenses				
Program or Operating Expenses (Note 17)	$	$ 1,833,809	$ 1,896,689	$ 243,637
Cost of Goods Sold				
Intragovernmental			83,677	744
Bad Debts and Writeoffs		(298)	87	4
Interest				
Federal Financing Bank/Treasury Borrowing				
Other			9,498	18
Other Expenses (Note 18)			392,574	
Total Expenses	$	$ 1,833,511	$ 2,382,528	$ 244,403
Excess (Shortage) of Revenues and Financing Sources Over Total Expenses Before Extraordinary Items	(1,054,649)		(124,452)	739
Excess (Shortage) of Revenues and Financing Sources Over Total Expenses	$ (1,054,649)	$	$ (124,452)	$ 739

(Unaudited)

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF OPERATIONS
FOR THE PERIOD ENDED SEPTEMBER 30, 1995
(Dollars in Thousands)

	AIRPORT AND AIRWAY TRUST FUND (CORPUS)	TRUST FUND GRANTS-IN-AID TO AIRPORTS	TRUST FUND FACILITIES & EQUIPMENT	TRUST FUND RESEARCH, ENGR & DEVEL
Change in Net Position				
Net Position, Beginning Balance, as Previously Stated	$ 6,947,751	$ 859,623	$ 12,375,014	$ 257,373
Adjustments (Note 19)			(429,033)	
Net Position, Beginning Balance, as Restated	6,947,751	859,623	11,945,980	257,373
Excess (Shortage) of Revenues and Financing Sources Over Total Expenses	(1,054,649)		(124,452)	739
Plus (Minus) Non Operating Changes (Note 20)	1,058,311	(330,778)	30,748	18,870
Net Position, Ending Balance	$ 6,951,413	$ 528,845	$ 11,852,277	$ 276,982

The accompanying notes are an integral part of these statements
(Unaudited)

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF OPERATIONS
FOR THE PERIOD ENDED SEPTEMBER 30, 1995
(Dollars in Thousands)

	AVIATION INSURANCE REVOLVING	AIRCRAFT PURCHASE LOAN GUAR	OPERATIONS	OTHER FUNDS	Consolidated Total
	$ 502	$ 1	$ 4,489,768	$ 70	$ 8,455,219
			9,735		18,819
			41,535		113,982
	2,758				2,758
					763,953
					5,572,641
	36		3,150	(8,492)	285,016
					(7,391,244)
	$ 3,297	$ 1	$ 4,544,189	$ (8,422)	$ 7,821,146
	$ 502	$ 1	$ 4,501,261	$ 70	$ 8,475,969
			46,243		130,664
			(88)	8,148	7,853
			313		9,829
	3		10,887		403,464
	$ 505	$ 1	$ 4,558,613	$ 8,218	$ 9,027,779
	2,792		(14,425)	(16,640)	(1,206,635)
	$ 2,792	$	$ (14,425)	$ (16,640)	$ (1,206,635)

(Unaudited)

U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
COMBINING STATEMENT OF OPERATIONS
FOR THE PERIOD ENDED SEPTEMBER 30, 1995
(Dollars in Thousands)

AVIATION INSURANCE REVOLVING	AIRCRAFT PURCHASE LOAN GUAR	OPERATIONS	OTHER FUNDS	Consolidated Total
$ 55,658	$ (16)	$ (2,036,524)	$ 1,538	$ 18,460,417
		(84,004)	(1)	(513,038)
55,658	(16)	(2,120,529)	1,537	17,947,377
2,792		(14,425)	(16,640)	(1,206,635)
(502)	(1)	2,004,989	(3,626)	2,778,011
$ 57,948	$ (17)	$ (129,965)	$ (18,729)	$ 19,518,754

The accompanying notes are an integral part of these statements
(Unaudited)

Note 1. Significant Accounting Policies:

The consolidated financial statement is presented in accordance with the accounting principles and reporting standards contained in Department of Transportation (DOT) and Federal Government financial policies, procedures, and reporting requirements including those of the principal central agencies: the Department of Treasury (Treasury); the General Accounting Office; and the Office of Management and Budget (OMB). The reporting standards followed include the Statements of Federal Financial Accounting Standards (SFFAS) Nos. 1 through 3 issued by OMB. In addition, Federal Aviation Administration (FAA) Order 2700.31, Uniform Accounting Systems Operations Manual, and related documentation contain FAA-specific accounting policy.

A. Basis of Presentation

The financial statement has been prepared to report the financial position and results of operations of the FAA, as required by the Chief Financial Officers Act of 1990 (CFO Act), as amended by the Federal Financial Management Act of 1994 (FFM Act), Title IV of the Government Management Reform Act of 1994 (GMR Act). The statement has been prepared from the books and records of FAA in accordance with the form and content for entity financial statements, as specified by OMB Bulletin 94-01, and FAA's accounting policies which are summarized in this note. This statement is, therefore, different from the financial management reports, also prepared by FAA pursuant to OMB directives, that are used to monitor and control FAA's use of budgetary resources.

B. Reporting Entity

The Treasury designates reporting entities for Federal agencies for submission of financial statements to the Treasury. The OMB budget account listing is used to determine reporting entities. For this financial statement, FAA adhered to the same reporting entities as those designated by the Treasury. These four reporting entities are listed below. The combining statement presents the financial condition and activities of FAA as a whole, as well as the component data for each of the four entities.

Entity	Appropriation/Fund /Account
Trust Fund	Airport and Airway Trust Fund Cash and Investments
	Grants-in-Aid
	Facilities and Equipment
	Research and Development
	Programs Administered by Other Agencies
Revolving Fund	Aviation Insurance Program
Loan Guarantee	Aircraft Purchase Loan Guarantee Program
	Borrowing Authority to Liquidate Defaulted Loans
	Appropriation to Liquidate Borrowed Funds and Interest
All Others (Unsegmented)	Operations
	Facility and Equipment Development
	Miscellaneous Receipts
	Budget Clearing Accounts
	Suspense Accounts
	Items Not Classified by Financing Source

The Airport and Airway Trust Fund financed approximately 75 percent of the fiscal year (FY) 1995 total budget. A brief description of each appropriation is presented in chapter 3, FY 1995 Financial Highlights. The only appropriations receiving General Fund financing are the Operations appropriation and the appropriation to liquidate debts to the Treasury incurred for the Aircraft Purchase Loan Guarantee Program. Approximately 50 percent of the FY 1995 funding of the Operations appropriation was financed by the General Fund, and the remainder was funded by the Trust Fund. The infusion of funds from the Trust Fund to the Operations appropriation is accomplished by periodic transfers. Once the transfers are made, that portion of the Operations fund derived from the Trust Fund is accounted for under the General Fund Operations appropriation symbol, thus losing the identity of the source.

The financial statement presented includes all entities under the purview of the FAA. The CFO Act, as amended by the FFM Act of 1994, Title IV of the GMR Act, requires preparing and submitting to the Director of OMB an audited financial statement covering all accounts and associated activities of the agency. The combining statement shows the component data of each FAA entity. Further details within an entity are provided as notes where appropriate.

C. Budgets and Budgetary Accounting

Congress annually provides FAA appropriations to permit FAA to incur obligations for specified purposes. For FY 1995, FAA was accountable for Trust Fund appropriations, General Fund appropriations, a Revolving Fund, and a borrowing authority. FAA recognizes budgetary resources as assets when cash (funds held by Treasury) are made available through Treasury warrants and Trust Fund transfers. See paragraph B above.

D. Basis of Accounting

Transactions are recorded on an accrual accounting basis and a budgetary basis. Under the accrual method, revenues are recognized when earned, and expenses are recognized when a liability is incurred, without regard to receipt or payment of cash. An exception to this rule is the Airport and Airway Trust Fund revenues from excise taxes. They are recorded on the basis of cash transferred from the Treasury General Fund. Transactions are also classified by fund account. This is accomplished by assigning each transaction a unique attribute (Treasury symbol) identifying the appropriation and the period of availability. Note 1.E. Revenues and Other Financing Sources contains further information. Budgetary accounting facilitates compliance with legal constraints and controls over the use of Federal funds. The combining statement, which shows component data, does reflect relevant transfers between funds and fund entities, where appropriate.

E. Revenues and Other Financing Sources

FAA receives its funding for program and administrative costs from appropriations funded by the Airport and Airway Trust Fund and the Treasury General Fund. The Trust Fund is sustained by excise taxes collected by the Internal Revenue Service (IRS) from airway facilities users. The IRS records excise tax revenues on a cash basis, and an equivalent amount is transferred by Treasury into the Trust Fund. The Trust Fund also earns interest from investments. Interest income is recognized as revenue on the accrual basis.

FAA receives annual, multi-year, and no-year appropriations that may be used, within statutory limits, for operating and capital expenditures. Additional amounts are obtained from service fees (e.g., registry fees) and through reimbursements for services performed for other domestic and foreign governmental entities.

Appropriations are recognized as revenues as they are used to pay program or administrative expenses. Revenues from reimbursements are recognized concurrently with the recognition of accrued expenditures for performing services.

F. Funds with Treasury and Cash

FAA does not maintain cash in commercial bank accounts. Generally, cash receipts and disbursements for FAA are processed by the Treasury. Funds with Treasury are available to pay current liabilities and finance authorized purchase commitments. FAA maintains petty cash (imprest funds) outside the Treasury to facilitate small purchases.

FAA does not maintain any balances of foreign currencies. Payments made in foreign currency are made either by the Treasury or the Department of State and are reported by FAA as converted to the United States (U.S.) dollar equivalent.

G. Accounts and Loans Receivable

FAA's financial statement includes the activities and balances of relevant Treasury General Fund Miscellaneous Receipt accounts. This is done to establish an audit trail and to maintain accountability for defaulted loans under the Aircraft Purchase Loan Guarantee Program. Under the terms of the loan guarantee agreement, a lender may demand payment from FAA if the borrower defaults and does not remedy the default. FAA then has the rights of the

original lender against the defaulted borrower. Upon default, FAA establishes an accounts receivable in the General Fund Miscellaneous Receipts account to reflect the amount due from the borrower for principal and interest. FAA also establishes an intragovernmental liability to offset the accounts receivable which represents an asset of the Treasury, not FAA.

H. Operating Materials and Supplies

Operating materials and supplies are comprised primarily of unissued materials and supplies that will be consumed in normal, future operations. Operating materials and supplies on hand at yearend are stated using standard costs. Standard costs are adjusted quarterly to reflect current prices and applied to materials and supplies on hand. The resulting write-up or write-down is recorded as a materials and supplies valuation gain or loss. This procedure does not comply with SFFAS No. 3 which permits the recording of valuation gains and losses only when operating materials and supplies are determined to be excess, obsolete, or unserviceable. FAA will in future years ensure compliance with SFFAS No. 3. Other classifications of materials and supplies are valued on the basis of actual prices paid. FAA does not maintain allowance accounts for valuation adjustments. Operating materials and supplies are reclassified as expenses or work in progress when consumed for operation. See Note 8. Operating Materials and Supplies, Net for additional information.

I. Investment in U.S. Government Securities

Unexpended funds in the Airway and Airport Trust Fund and Aviation Insurance Revolving Fund are invested in U.S. Government securities. A portion of the Trust Fund investments is liquidated semi-monthly to transfer cash to FAA appropriations accounts. The Revolving Fund investments are generally held to maturity. Investments, redemptions, and reinvestments are controlled and processed by the Treasury. See Note 4. Investments for additional information.

J. Property and Equipment

FAA does not recognize amortization of costs (depreciation) over the life of fixed assets. Capital expenditures for property are recognized as expenses (loss) upon disposal of the assets. Construction in progress is valued at direct (actual) costs plus applied overhead and other indirect costs as accumulated by the regional project materiel system. The system accumulates costs by project number assigned to each facility being constructed.

The General Services Administration (GSA) receives payment for real property that is under its control and is used by FAA. Payments are made from an appropriation to the Office of the Secretary of Transportation (OST), part of which (corresponding to FAA costs) is derived from the Airport and Airway Trust Fund. See Note 17. Program Expenses for further discussion of GSA rental payments.

Personal property is capitalized when acquisition costs exceed $5,000. Equipment with an acquisition cost of less than $5,000 is expensed when purchased. FAA also maintains a separate inventory of "sensitive" items.

K. Prepaid and Deferred Charges

Generally, advance payments are prohibited by law; there are some exceptions such as subscriptions. Payments in advance of the receipt of goods and services are recorded as prepaid charges at the time of prepayment and recognized as expenses when the related goods and services are received.

L. Liabilities

Liabilities represent the amount paid by FAA as the result of a transaction or event that has already occurred. However, no liability can be liquidated by FAA absent an appropriation. Liabilities for which an appropriation has not yet been enacted are, therefore, classified as unfunded liabilities, and there is no certainty that the appropriation will be enacted.

M. Borrowing Payable to the Treasury

Borrowing involves loans from the Treasury to fund expenses from the Aircraft Purchase Loan Guarantee Program. Treasury renews the debt obligation until FAA receives an appropriation to liquidate the principal and interest.

N. Interest Payable to the Treasury

FAA owes interest to the Treasury based on its debt to the Treasury as a result of borrowing for the Aircraft Purchase Loan Guarantee Program.

O. Contingencies

FAA recognizes losses for contingent liabilities when such losses are probable and reasonably estimable. Loss contingencies such as the various claims and legal actions to which FAA is a party that do not meet both criteria of probable and estimable are disclosed in Note 22. Contingencies.

P. Annual, Sick, and Other Leave

Annual leave is accrued as it is earned, and the accrual is reduced as leave is taken. At each bi-weekly pay period, the balance in the accrued annual leave account is adjusted to reflect the latest pay rates and unused hours of leave. To the extent current or prior year appropriations are not available to fund annual leave earned but not taken, funding will be obtained from future financing sources. Sick leave and other types of nonvested leave are expended as taken. See Note 11. Other Liabilities for further discussion of leave liabilities.

Q. Retirement Plan

FAA employees who participate in the Civil Service Retirement System (CSRS) receive from FAA a matching contribution equal to 7 percent of pay. FAA does not report CSRS assets, accumulated plan benefits, or unfunded liabilities, if any, applicable to employees. Reporting such amounts is the responsibility of the Office of Personnel Management.

On January 1, 1987, the Federal Employees Retirement System (FERS) went into effect pursuant to Public Law (P.L.) 99-335. Most employees hired after December 31, 1983, are automatically covered by FERS and Social Security. Employees hired prior to January 1, 1984, could elect to either join FERS and Social Security or remain in CSRS. A primary feature of FERS is that it offers a savings plan to which FAA automatically contributes 1 percent of pay and matches any employee contribution up to an additional 4 percent of pay. For most employees hired since December 31, 1983, FAA also contributes the employer's matching share for Social Security.

R. Comparative Data

Although comparative data for FY 1994 have not been presented in the financial statement, some comparative data are included in the following notes.

Note 2. Fund Balance with Treasury:

(Dollars in Thousands)

	Obligated	Unobligated & Available	Unobligated & Restricted	Total
Trust Fund	$ 3,089,862	$ (2,501,546)	$ (377,024)	$ 211,292
Revolving Fund	(62,427)	62,826	-	399
Operations General Fund	589,134 (1)	916 (2)	43,480 (3)	633,530
Other Funds	8,502 (4)	-	-	8,502
Total	$ 3,625,071	$ (2,437,804)	$ (333,544)	$ 853,723

The period of time during which FAA has authority to incur obligations is determined by the type of appropriation (i.e., single-, multi-, and no-year). Obligated fund balances represent appropriations that are available to liquidate (i.e., pay) obligations that existed as of September 30, 1995, having been properly incurred before obligating authority expired. Unobligated and available fund balances represent amounts that are available for incurring new obligations (i.e., obligational authority has not yet expired). Unobligated and restricted fund balances represent balances of appropriations for which the period of availability for obligation has expired. These balances are only available for upward adjustments of obligations incurred during the period for which the appropriation was available or for paying claims attributable to the period.

(1) This amount includes $481.7 million from the FY 1995 appropriation, available as of September 30, 1995, to pay obligations that had been incurred during FY 1995. The amount also includes $5,000 appropriated to liquidate debts to Treasury of the Aircraft Purchase Loan Guarantee Program. Additionally, the amount includes $106.8 million of balances of single-year appropriations that remain available to pay obligations incurred prior to FY 1995. The remaining $0.6 million represents the balance available to pay the obligations of a no-year appropriation.

(2) Represents the unobligated balance of a no-year appropriation.

(3) This amount includes $2.7 million from the FY 1995 appropriation of which the availability for obligation expired on September 30, 1995. The remaining $40.8 million represents single-year appropriations that expired prior to FY 1995.

(4) Includes a $0.587 million transfer appropriation balance from GSA for the relocation costs involved in moving FAA facilities from under-utilized valuable property targeted for public sale to more economical facilities.

Note 3. Cash, Foreign Currency, and Other Monetary Assets:

(Dollars in Thousands)

Imprest Fund Cash	$ 1,455
Total Cash, Foreign Currency, and Other Monetary Assets	$ 1,455

Note 4. Investments:

(Dollars in Thousands)

	Cost	Market Value	Amortization Method	Amortized (Premium) Discount	Net Investments
Intragovernmental Securities:					
(1) (Federal Securities, Non-Marketable) Airport and Airway Trust Fund	$ 6,766,128	$ -		$ -	$ 6,766,128
(2) (Federal Securities, Market-Based) Aviation Insurance Revolving Fund (Par)	61,260	-	Straight Line	(3,583)	57,677
Total	$ 6,827,388	$ -		$ (3,583)	$ 6,823,805

(1) Nonmarketable par value Treasury securities are special series debt securities that Treasury issues to Federal entities at face value (par value). The securities are redeemed at face value on demand; thus, investing entities recover the full amount invested, plus interest. Investments of the Airport and Airway Trust Fund are made by the fund's trustee, the Secretary of the Treasury.

A total of $11.145 billion was invested in U.S. Treasury Certificates of Indebtedness as of September 30, 1995, at a rate of 6.78 percent with a maturity date of June 30, 1996. This represents a $1.06 billion decrease in the amount invested as of September 30, 1994. A total of $4.379 billion of the Airport and Airway Trust Fund balance corresponds to a Trust Fund appropriation of cash to liquidate Airport Improvement Program (AIP) grant obligations that has not yet been transferred to the agency's fund balance with Treasury. This amount is disclosed on FAA's financial statement under accounts receivable instead of under investments, pursuant to an agreement with OMB. More detailed information on liquidating cash authority is disclosed in Note 5. Accounts Receivable.

(2) Market-based Treasury securities are debt securities that Treasury issues to Federal entities without statutorily determined interest rates. Although the securities are not marketable, their terms (prices and interest rates) mirror the terms of marketable Treasury securities. FAA amortizes premiums and discounts on market-based Treasury securities over the life of the security using the straight line method of amortization. SFFAS No. 1 requires amortizing Treasury security premiums and discounts over the life of the investment using the interest method. FAA's current procedures will be modified in FY 1996 to comply with SFFAS No. 1. The following amounts are invested in market-based Treasury securities:

(Dollars in Thousands)

	Maturity Date	Effective Interest Rate	Amount
1	12/14/95	6.56%	$ 11,915
2	4/4/96	5.93%	20,155
3	6/27/96	5.39%	13,640
4	9/19/96	5.28%	15,550
			$ 61,260

Note 5. Accounts Receivable:

(Dollars in Thousands)

	Liquidating Cash Appropriation	Other Accounts Receivable	Gross Amount Due	Allowance for Uncollectable Amounts	Net Amount Due
Intragovernmental:					
Airport and Airway Trust Fund	$ 4,379,115	$ 65,584	$ 4,444,699	$ -	$ 4,444,699
Appropriated Funds	26	17,503	17,529	-	17,529
Other Funds	-	8,556	8,556	-	8,556
Total	$ 4,379,141	$ 91,643	$ 4,470,784	$ -	$ 4,470,784
Governmental:					
Airport and Airway Trust Fund	$ -	$ 11,037	$ 11,037	$ (72)	$ 10,965
Appropriated Funds	-	11,909	11,909	(221)	11,688
Other Funds	-	5,274	5,274	(1,698)	3,576 (1)
Total	$ -	$ 28,220	$ 28,220	$ (1,991)	$ 26,229

Delinquency notices are sent to debtors when billings remain uncollected for 30 days. A followup notice is sent if the debtor does not respond to the first notification within 30 days. Additional actions such as salary, retirement, and tax refund offset; consumer reporting; and referral to collection agencies may be taken depending on the circumstances of each case. An allowance for uncollectible accounts receivable is established when, based upon a monthly review of outstanding accounts and the failure of all collection efforts, management determines that collection is unlikely to occur.

(1) A total amount of $3.36 million represents an accounts receivable balance of Treasury General Fund Miscellaneous Receipt accounts. FAA established a $3.36 million intragovernmental liability to offset the accounts receivable balance which represents an asset of the Treasury, not FAA. See Note 11. Other Liabilities.

Note 6. Other Assets:

(Dollars in Thousands)

Other Entity Assets - Intragovernmental

Undistributed Foreign Costs	$ 1,242
Undistributed Costs - Treasury Clearing	3,092
Other Assets - Undistributed	23,216
Total	$ 27,550

Note 7. Loans and Loan Guarantees, Non-Federal Borrowers:

Defaults on Pre-1992 Guaranteed Loans:

(Dollars in Thousands)

Aircraft Purchase Loan Guarantee Program	Defaulted Guaranteed Loans & Interest Receivable, Gross	Allowance for Estimated Uncollectible Defaulted Loans & Interest	Loans & Interest Receivable, Net	Foreclosed Property	Value of Assets Related To Loan Guarantees
	$ 20,063	$ 18,797	$ 1,266	$ -	$ -

FAA currently does not have any direct loan programs, but FAA does operate the Aircraft Purchase Loan Guarantee Program. Authorization for issuing new loan guarantees expired prior to 1992. The only remaining program function is to make payments to lenders in the event of defaults on existing guarantees and to maintain collateral and accounts receivable. While this authority was in effect, FAA could guarantee up to 90 percent of the principal and 100 percent of the interest of an aircraft purchase loan. Upon default, FAA establishes an accounts receivable in the General Fund Miscellaneous Receipts account to reflect the amount due from the borrower for principal and interest. FAA also establishes an intragovernmental liability to offset the accounts receivable which represents an asset of the Treasury, not FAA. See Note 11. Other Liabilities.

Accounts receivable from debtors on account of defaulted guaranteed loans are reported net of an allowance for estimated uncollectible amounts. The Federal Credit Reform Act does not apply to FAA's loan guarantees, as it was enacted after the authority to issue new guarantees expired.

The outstanding guarantee loan balance was $3.1 million as of September 30, 1995. Administrative expenses to maintain the residual values of this program are minimal. FAA has no full-time employees designated to administer the program.

Note 8. Operating Materials and Supplies, Net:

(Dollars in Thousands)

	Value	Valuation Method
Items Held For Use:		
General Operations	$ 316,639	Standard Cost
Aircraft Parts	38,895	Standard Cost
Facility Components	120,099	Standard Cost
Purchases in Transit (1)	897,161	Actual
Other Unclassified	22,376	
Total	$ 1,395,170	

General operating materials and supplies, including aircraft spare parts, are disclosed as Appropriated Funds assets. FAA does not maintain allowance accounts. See Note 16. Other Revenues and Financing Sources and Note 18. Other Expenses. There are no restrictions on the use (other than it must be used for agency purposes) or disposition of operating materials and supplies, except that FAA may not donate it. Operating materials and supplies are known to include excess, obsolete, and unserviceable items. The value of such inactive operating materials and supplies will be determined and disclosed in future financial statements.

(1) The Purchases in Transit (PIT) balance also includes progress payments to contractors and amounts for equipment that, although the equipment has been received by the regions, were not closed out of this account as of September 30, 1995. These transactions will be transferred in FY 1996 into the proper asset account. Previous DOT OIG audits in FY's 1992, 1993, and 1994 disclosed that, due to the improper posting of transactions, PIT is overstated and the balance cannot be substantiated. FAA is currently taking action to correct this deficiency. The planned completion date for this action is October 1997.

Note 9. Property and Equipment, Net:

(Dollars in Thousands)

Classes of Fixed Assets	FY 1995		FY 1994
Land	$ 57,340		$ 55,398
Structures, Facilities and Lease Improvements	1,680,648	(1)	1,538,862
Aircraft	211,462		200,309
Aircraft Engines	5,576		5,576
ADP Software	224,600	(2)	-
Equipment	2,723,522	(3)	2,469,649
Assets Under Capital Lease	130,599		158,440
Construction in Progress	2,780,856		2,334,791
Equipment on Loan to Others	69,874		64,676
Property Not in Use	68,645	(4)	89,816
Unclassified	4,163		-
Total	$ 7,957,285		$ 6,917,517

(1) The DOT OIG disclosed, as a result of the FY 1995 financial statement audit, that acquisition costs of certain FAA buildings had been improperly classified as operating expenses. Therefore, structures and facilities were increased in FY 1995 by the following amounts: (1) $45 million for buildings acquired by the Mike Monroney Aeronautical Center (MMAC) and (2) $31 million for a building acquired by the FAA Technical Center (renamed in FY 1996 the William J. Hughes Technical Center).

(2) The DOT OIG disclosed, as a result of the FY 1993 financial statement audit, that approximately $772 million in software development costs related to the Advanced Automation System (AAS) was not properly capitalized because FAA management had viewed software development as basic research and development. ADP software was adjusted in FY 1995 by $224.6 million to capitalize that portion of the AAS software retained by the agency. FY 1995 program expenses will be reviewed during FY 1996 to determine whether any additional AAS costs may have been misclassified and, if necessary, adjustments will be made to ADP software and prior period operating expenses.

(3) Previous DOT OIG audits in FY's 1992, 1993, and 1994 disclosed that, due to the improper posting of transactions, the equipment balance is understated and the purchases-in-transit (PIT) balance is overstated. See Note 8. Operating Materials and Supplies, Net. FAA is currently taking action to correct this deficiency. The planned completion date for this action is October 1997. The PIT balance includes progress payments to contractors and amounts for equipment that, although the equipment has been received by the regions, were not closed out and reclassified as equipment as of September 30, 1995. These transactions will be reclassified in FY 1996 as equipment. Equipment was adjusted in FY 1995 by $101.4 million for the acquisition costs of AAS hardware that had in prior years been improperly classified as operating expenses.

(4) Property not in use is being evaluated to determine if it should be disposed of or returned to use.

Note 10. Debt:

(Dollars in Thousands)

Liabilities Covered by Budgetary Resources	Beginning Balance	New Borrowings	Repayments	Ending Balance	Refinancing
Intragovernmental Debt: Aircraft Purchase Loan Guarantee Program					
Borrowing from Treasury	$ 21	$ -	$ -	$ 21	$ -
Total Debt	$ 21	$ -	$ -	$ 21	$ -

Note 11. Other Liabilities:

(Dollars in Thousands)

A. Other Liabilities Covered by Budgetary Resources

1. Intragovernmental:	Noncurrent Liability	Current Liability	Total	
Advances from Others	$ -	$ 42,046	$ 42,046	(1)
Employee Savings Bond Deductions		568	568	
Proceeds From Replacement of Property		12	12	
Total	$ -	$ 42,626	$ 42,626	
2. Governmental:				
Accrued Payroll & Benefits, Federal	$ -	$ 111,615	$ 111,615	(2)
Accrued Payroll & Benefits, Employee Contributions		24,040	24,040	
Advances from Others, Unclassified		1,353	1,353	
Tax Deductions - State and Local		145	145	
Liability for Unapplied Collections		9,695	9,695	
Total	$ -	$ 146,848	$ 146,848	

(Dollars in Thousands)

B. Other Liabilities Not Covered by Budgetary Resources

1. Intragovernmental:	Noncurrent Liability	Current Liability	Total	
Workers' Compensation Benefits	$ 78,378	$ 78,547	$ 156,925	(3)
Total	$ 78,378	$ 78,547	$ 156,925	
2. Governmental:				
Environmental Remediation	$ 400,500	$ -	$ 400,500	(4)
Air Traffic Control at Closed DOD Bases	174,400		174,400	(5)
Senior Executive Service Awards	204		204	(6)
Accrued Unfunded Leave and Associated Benefits	277,054		277,054	(7)
Total	$ 852,158	$ -	$ 852,158	

(1) A total amount of $4.63 million represents an intragovernmental liability established to offset Treasury General Fund Miscellaneous Receipt account balances ($3.36 million in accounts receivable, net and $1.27 million in loan guarantees, net). See Note 5. Accounts Receivable and Note 7. Loans and Loan Guarantees, Non-Federal Borrowers.

(2) Accrued liabilities for Federal payroll and benefits and related employee contributions represent the unpaid pay period September 17 through September 30, 1995.

(3) The U.S. Department of Labor (DOL) administers the Federal Employees' Compensation Fund. DOL provides FAA an annual statement of workers' compensation benefits paid for its employees for each fiscal accounting period July 1 through June 30 (5 U.S. Code (U.S.C.) 8147). FAA does not record a workers' compensation benefits liability applicable to its fiscal year (October 1 - September 30) (i.e., reducing the DOL charge by the portion applicable to the beginning quarter of the DOL accounting period, and applicable to FAA's prior fiscal year, and accruing an amount for the ending quarter). This does not have a material effect on the financial statement because the amount that would be subtracted is similar to the amount that would be accrued. Funding for the amount charged to FAA is normally appropriated for the fiscal year ending 2 years after the liability period.

(4) Environmental remediation involves asbestos abatement and the correction of fire safety deficiencies in air traffic control (ATC) towers, replacement of underground fuel storage tanks, and decontamination of soil and ground water at FAA facilities. Such remediation will bring FAA in compliance with Federal, state, and local environmental regulations.

(5) Providing ATC services where needed is a responsibility of FAA under 49 U.S.C. 44502(a)(1)(B). FAA will continue providing ATC functions for civilian users of the National Airspace System (NAS) in the vicinity of certain Department of Defense bases which are scheduled for closure.

(6) Accrued liabilities for senior executive service awards include awards for services performed during FY 1995 that were not paid until the first quarter of FY 1996.

(7) The estimated liability for accrued wages includes employee annual leave, home leave, compensatory hours, and credit hours and the agency's cost of employee benefits associated with such leave for the period ended September 30, 1995.

Note 12. Leases:

A. FAA as Lessee:

Capital Leases:

(Dollars in Thousands)

Summary of Assets Under Capital Lease:	
Land and Buildings:	
Aeronautical Center	$ 130,599
Technical Center	49,250
	$ 179,849 (1)

Future Payments Due:

Fiscal Year	Land and Buildings
Year 1	$ 16,860
Year 2	16,860
Year 3	16,766
Year 4	16,256
Year 5	12,422
After 5 Years	108,472
Less: Imputed Interest	(68,561)
Total Capital Lease Liability	$ 119,075
Funded	-
Unfunded	$ 119,075 (2)
Less: Physical Assets Held for Others	134
Total	$ 118,941

Capital leases consist of lease agreements for land and buildings at the MMAC in Oklahoma City, Oklahoma, and at the FAA Technical Center located in Pomona, New Jersey. The MMAC land and buildings are leased from the Oklahoma City Airport Trust at an annual lease payment of $12 million. The Oklahoma City Airport Trust issues bonds, which are secured by a pledge of the gross revenues of the airport inclusive of the lease by FAA, to finance construction of MMAC buildings. FAA leases the Technical Center administration building from the Atlantic County Improvement Authority at an annual lease payment of $4.8 million. FAA's capital lease payments are funded annually. The following represents capital lease accounting treatment under generally accepted accounting principles (GAAP).

(1) Capital lease assets are recorded at the net present value of the minimum lease payments at the leases's inception.

(2) Amounts due within the current fiscal year corresponding to the principal portion of the lease payments (according to GAAP for capital leases) are recorded as current year obligations. The remaining such principal payments are recorded as unfunded lease liabilities. The imputed interest (according to GAAP for capital leases) is funded and expensed annually. Interest amounts imputed to subsequent years ($68.6 million) are not recorded as unfunded liabilities in the Departmental Accounting and Financial Information System (DAFIS).

Operating Leases:

(Dollars in Thousands)

Future Payments Due:

Fiscal Year	Land & Buildings	Mach. & Equipment	Other	Total
Year 1	$ 25,125	$ 2,913	$ 592	$ 28,630
Year 2	22,313	2,910	597	25,820
Year 3	19,583	2,937	580	23,100
Year 4	17,130	558	584	18,272
Year 5	13,309	566	588	14,463
After 5 Years	16,978	355	371	17,704 (1)
Total Future Operating Lease Payments	$ 114,438	$ 10,239	$ 3,312	$ 127,989

Operating leases are for land and buildings occupied by FAA personnel and equipment or land leased for installation of FAA ATC equipment. Operating leases are obligated as recurring charges in DAFIS in the year in which the service is received. Unfunded liabilities and future funding requirements for operating lease payments due in future years are not recorded in DAFIS. Operating leases are funded and expensed annually.

(1) At the end of FY 1995, sufficient operating lease information was not available to disclose accurately the cumulative amount due on operating leases after 5 years. This amount will be accurately disclosed in FY 1996.

B. FAA as Lessor:

(Dollars in Thousands)

Future Projected Receipts:

Fiscal Year	Land & Buildings	Mach. & Equipment	Other	Total
Year 1	$ 3,925	$ 276	$ -	$ 4,201
Year 2	3,983	276	-	4,259
Year 3	4,044	276	-	4,320
Year 4	4,098	275	-	4,373
Year 5	4,150	275	-	4,425
After 5 Years	164,331	-	-	164,331
Total Future Operating Lease Receivables	$ 184,531	$ 1,378	$ -	$ 185,909

FAA leases Washington National and Washington Dulles International Airports to the Metropolitan Washington Airports Authority, the airports' operator. The lease took effect in March 1987 for $3 million a year for a 50-year term. Upon expiration of the lease, the airports and facilities, originally valued at $244 million, together with any improvements will revert to the Federal Government. FAA also leases parcels of Government-owned land, originally valued at $1.6 million, generally for agriculture. These lease payments include a general price level adjustment and interest earned by the lessee on monthly deposits to an escrow account.

Note 13. Pensions and Other Actuarial Liabilities:

(Dollars in Thousands)

	Actuarial Present Value of Projected Plan Benefits	Assumed Interest Rate (%) *	Assets Available to Pay Benefits	Actuarial Liability Not Covered by Budgetary Resources
Workers' Compensation Benefits	$ 736,148		$ -	$ 736,148
Total	$ 736,148		$ -	$ 736,148

OMB directed that an unfunded actuarial liability be established by Federal agencies for workers' compensation benefits under the Federal Employees Compensation Act (FECA). OST, based on the DOL's actuarial projection, initially established that FAA's unfunded actuarial liability was $725.3 million as of June 30, 1994.

DOL adjusts the estimated unfunded actuarial liability for FECA annually based on the application of actuarial procedures. The actuarial liability estimates for FECA benefits include the expected liability for death, disability, medical, and miscellaneous costs for approved compensation cases. The liability is determined using the paid losses extrapolation method calculated over the next 23-year period. This method utilizes historical benefit payment patterns related to a specific incurred period to predict the ultimate payments related to that period. These annual benefit payments have been discounted to present value. Interest rate assumptions utilized for discounting were as follows:

* For 1995, 7.10 percent in year 1, 6.60 percent in year 2, and 7.00 percent thereafter
For 1994, 7.00 percent in year 1 and thereafter

Note 14. Net Position:

(Dollars in Thousands)

	Trust Fund	Operations General Fund	Aviation Insurance Revolving Fund	Aircraft Purchase Loan Guarantee	Other Funds	Total
A. Unexpended Appropriations						
(1) Unobligated						
a. Available	$ (1,462,510)	$ (271,853)	$ (1,628)	$ (1)	$ (931)	$ (1,736,923)
b. Unavailable	-	-	-	-	-	-
(2) Undelivered Orders	5,367,674	461,391	4	-	181	5,829,250
(3) Other:						
Not Yet Appropriated	118,941 (1)	-	-	-	-	118,942
Total	$ 4,024,105	$ 189,538	$ (1,624)	$ (1)	$ (750)	$ 4,211,269
B. Invested Capital	22,368,757	552,321	-	(16)	(1,369)	22,919,693
C. Cumulative Results of Operations	48,120	298,496	59,583	-	30	406,229
D. Other	(4,486,469) (2)	-	-	-	-	(4,486,469)
E. Future Funding Requirements	(2,345,000) (3)	(1,170,320) (4)	(10) (4)	-	-	(3,515,330)
Total	$ 19,609,513	$ (129,965)	$ 57,948	$ (17)	$ (2,089)	$ 19,535,394

(1) Represents appropriations not yet received for capital lease principal payments.

(2) Represents the total appropriated, unexpended cash in the Airport and Airway Trust Fund. Appropriated cash is withdrawn biweekly from the Trust Fund to the appropriation accounts for paying salaries and bills.

(3) Includes future funding requirements for capital lease principal payments, environmental remediation, providing ATC functions to civilian users of the NAS system in the vicinity of closed DOD bases, and AIP grant obligations above liquidating cash appropriations.

(4) Includes future funding requirements for accrued annual and home leave, compensatory time, credit hours, and the associated agency cost of benefits associated with such categories of paid absences and FECA benefits.

Note 15. Taxes:

(Dollars in Thousands)

Excise Taxes:

	1995	1994
Passenger Ticket Tax	$ 4,767,634	$ 4,528,188
Waybill Tax	361,315	283,858
International Departure Tax	232,952	218,117
Fuel Taxes	210,740	187,163
Total Tax Revenues	$ 5,572,641	$ 5,217,326

Note 16. Other Revenues and Financing Sources:

(Dollars in Thousands)

A. Other Revenues and Financing Sources

	1995	1994
Gain on Materials and Supplies Valuations (1)	$ 258,161	$ 263,902
Gain on Fixed Assets	32,367	33,636
Other Gains	(206)	(206)
Revenue Credited to Operations Appropriation	3,150	2,494
Revenue Credited to Miscellaneous Receipts	-	13,384
Aviation Insurance Premiums Credited to the Aviation Insurance Revolving Fund	36	19
Total	$ 293,508	$ 313,229

(1) Amount resulting from various functions at the MMAC, such as repairs, improvements, items returned from field facilities, shop fabrication of specialty items, parts transfers, transfers between accounts, bin inspection, damage to materials and supplies, and differences between actual costs and standard costs used in valuing materials and supplies. Additionally, regional offices processed adjustments resulting in materials and supplies valuation gains.

(Dollars in Thousands)

B. Other Information

	1995	1994
Amount Derived From Tax Receipts	$ 38,862	$ 28,060
Amount Derived From Other Resources	-	11,942
Total Transferred to General Fund	$ 38,862	$ 40,002
Transfers to Accounts in OST	7,352,382	6,491,685
Total	$ 7,391,244	$ 6,531,687

Note 17. Program Expenses:

(Dollars in Thousands)

Operating Expenses by Appropriation	1995	1994
Operating	$ 4,501,261	$ 4,508,251
Facilities and Equipment	1,896,689	1,626,656
Research, Engineering and Development	243,637	221,532
Grants-in-Aid for Airports	1,833,809	1,611,536
Other Federal Agencies (1)	-	68,619
Aviation Insurance Program	502	237
Aircraft Purchase Loan Guarantee Program	1	7
Other Funds (2)	70	145
Total	$ 8,475,969	$ 8,036,983

Operating expenses are the actual costs incurred in conducting the activities of each of the programs for the period. Operating expenses exclude capital expenditures, interest expenses, and direct and indirect costs associated with cost of goods sold and services rendered. Operating expenses are not necessarily the same as outlays (expenditures of cash), a term which is used in many budget presentation documents. Obligations by major object class are contained in chapter 3, Financial Highlights. DAFIS cannot now disclose program expenses by object class.

(1) Before FY 1995, GSA space payments, as well as the financial activities of the Essential Air Carrier Service Appropriation, were reported in FAA's financial statement. Beginning in FY 1995, these entities are reported in OST's financial statement. OST receives a specific appropriation for paying GSA for the cost of occupying GSA-controlled space for all departmental activities. Of the total $78.5 million for space occupied by FAA, $37.7 million is derived from the general fund and is disclosed as OST's operating expense. The remaining $40.8 million is derived from the Airport and Airway Trust Fund and is disclosed as FAA's operating expense.

(2) Includes Facilities, Engineering, and Development, Other Ledger, expired operations appropriations, and suspense and deposit funds.

Note 18. Other Expenses:

(Dollars in Thousands)

Other Expenses	1995	1994
Other Ledger - Loss of Fixed Assets	$ 170,978	$ 46,124
Other Ledger - Loss on Materials & Supplies Valuation (1)	221,595	225,279
Discounts Lost	2	-
Loss Per Changes in FECA Actuarial Liability	10,886	-
Aviation Insurance - Annual Leave Expense	3	4
Total	$ 403,464	$ 271,407

(1) Amount resulting from various functions at the MMAC, such as repairs, improvements, items returned from field facilities, shop fabrication of specialty items, parts transfers, transfers between accounts, bin inspection, damage to materials and supplies, and differences between actual costs and standard costs used in valuing materials and supplies. Additionally, FAA regional offices processed adjustments resulting in materials and supplies valuation losses.

Note 19. Prior Period Adjustments:

(Dollars in Thousands)

Trust Fund Appropriations	$ (429,033)
Operations Appropriations	(84,004)
Other Funds	(1)
Total	$ (513,038)

Prior period adjustments to the Trust Fund and other funds are adjustments to FY 1995 beginning DAFIS asset, liability, and corresponding equity account balances. Prior period adjustments to the Trust Fund include capitalization of the following assets that had been improperly classified in prior years as operating expense: (1) $326 million for AAS software and hardware; (2) $45 million for MMAC buildings; and (3) $31 million for the AAS building at the FAA Technical Center. Prior period adjustments to Operations include corrections for the: (1) payments of prior year expenses made in FY 1995 and improperly charged to FY 1995 operating expense and (2) payments made in the prior year and improperly charged to prior year operating expense that are FY 1995 operating expenses. Prior period adjustments include $9 million in Performance Management System and Senior Executive Service awards earned in FY 1994 that, although properly paid with FY 1995 appropriations, were improperly charged to current year FY 1995 operating expense. Prior period adjustments also include $3.8 million in estimated payroll and benefit expenses for October 1, 1995 (FY 1995), that were incorrectly charged to FY 1994 operating expenses.

Note 20. Nonoperating Changes:

(Dollars in Thousands)

	1995	1994
A. Increases:		
(1) Transfers In	$ 351,806	$ 10,006
(2) Donations & Other Capital	817	2,054
(3) Other	6,195,647	4,993,520
(4) Total Increases	$ 6,548,270	$ 5,005,580
B. Decreases:		
(1) Transfers Out	$ 351,806	$ 17,093
(2) Donations & Other Capital	-	100,000
(3) Other	3,418,453	4,458,544
(4) Total Decreases	$ 3,770,259	$ 4,575,637
C. Net Nonoperating Changes	$ 2,778,011	$ 429,943

Note 21. Other Disclosures:

Contract Negotiations. FAA has a total of $191.7 million in commitments (funds reserved for possible future obligations) under unexpired Facilities and Equipment, and Research, Engineering, and Development appropriations for purchases of goods and services for which contract negotiations were not completed (i.e., agency obligations had not been incurred) at the end of FY 1995.

Contracts. As of September 30, 1995, FAA had $2.04 billion in contract options that, if exercised, would require the obligation of funds in future years.

Letters of Intent. FAA has authority under 49 U.S.C. 47110(e) to issue Letters of Intent to enter into AIP grant agreements. These letters do not represent agency obligations. FAA has issued Letters of Intent in the amount of $1,991 million covering the period FY 1988 to FY 2005. FAA had obligated $1,325 million of this total as of September 30, 1995. The $666 million balance remains unobligated.

AIP Grants. As of September 30, 1995, FAA had outstanding $102.8 million in AIP grant agreements for which liquidating cash appropriations have not been enacted. FAA's authority to enter into further agreements generally expires at the end of FY 1996. However, under 49 U.S.C. 47117(b), FAA may enter into grant agreements after September 30, 1996, for the unobligated balances of certain amounts apportioned under 49 U.S.C. 47114(c) and (d)(2). This applies to balances of amounts apportioned in FY 1995, which may be obligated through September 30, 1997; and to balances of amounts apportioned in FY 1996, which may be obligated through September 30, 1998.

Sunday Premium Pay. The U. S. Court of Appeals for the Federal Circuit has ruled that Federal employees who were regularly scheduled to work on a Sunday but instead took paid leave (annual, sick, or other excused absence) were entitled to Sunday premium pay for leave hours under 5 U.S.C. 5546(a) (Armitage v. United States, 991 F.2d 746 (Fed. Cir. 1993)). This decision made FAA liable for retroactive payments for the 25 percent Sunday premium, including accrued interest, to those who took leave on Sunday when they had been scheduled to work. There is a 6-year statute of limitation for back-pay claims. As of September 30, 1995, a total of $33.2 million was paid through negotiated settlements to or on behalf of 30,000 current and former FAA employees. No FY 1995 appropriations were used to pay any portion of the back pay liability because the FY 1995 DOT Appropriations Act prohibited using FY 1995 funds to pay Sunday premiums unless work was actually performed. In FY 1995, claims attributable to years for which appropriation accounts have been closed amounted to $140,662. These would have been payable from FY 1995 funds under 31 U.S.C. 1553(b)(1), but for the limitation on the FY 1995 DOT Appropriations Act that prohibited that payment. A further 450 claims, aggregating approximately $350,000, remain to be reviewed.

Note 22. Contingencies:

Legal Proceedings. Contingent liabilities include $30 billion in unadjudicated claims in a variety of administrative proceedings and legal actions and $500,000 in attorney fees associated with the unadjudicated claims which, if paid, might be funded by the Judgment Fund administered by the Departments of Justice and the Treasury, and not by agency appropriations.

Re-employment, Restoration, and Return Rights Program. The agency has a $41.35 million contingent liability under the Re-employment, Restoration, and Return Rights Program. The program consists of tours of duty ranging from 2 to 4 years. At the beginning of FY 1995, approximately 1,170 employees who previously had accepted transfers to overseas and certain domestic locations were contractually entitled to a future return move at Government expense. The typical cost per move is $50,000. During FY 1995, approximately 343 cases of potential return right claims either lapsed because employees elected not to exercise their rights or were invalidated by FAA review. At the end FY 1995, approximately 827 employees remained in the program. If every employee remaining in the program exercises his or her return rights, FAA's liability would be as follows:

(Dollars in Thousands)

FY	Amount
1996	$ 15,200
1997	11,300
1998	6,750
1999	8,100
Total	$ 41,350

Aviation Insurance Program. FAA may issue aircraft hull and liability insurance under the Aviation Insurance Program for certain air carrier operations. FAA's authority to issue insurance is limited to situations where commercial insurance is not available on fair and reasonable terms and where the operation to be insured is necessary to carry out the U.S. Government's foreign policy. The categories of insurance issued by FAA are premium insurance, for which a risk-based premium is charged to the air carrier, and non-premium insurance. Non-premium insurance, which represented all of the insurance issued by FAA in FY 1995, is issued for air carrier operations under contract to or on behalf of a U.S. Government agency, provided that the agency has an agreement with FAA to indemnify FAA against all losses covered by the insurance. FAA maintains standby non-premium war-risk insurance policies for 44 air carriers having approximately 900 aircraft available for Defense or State Department charters.

FAA normally insures only a small number of air carrier operations at any time. Further, the aviation infrastructure capacity in areas having high loss risk is usually limited, thus restricting operations there to a relatively small number per day. These factors are expected to place FAA in a position to terminate insurance coverage and/or insured air carrier operations in high-risk areas after the loss of no more than two aircraft, thereby limiting FAA's exposure to claims arising out of insured losses. The maximum expected liability for the loss of one insured aircraft is $1 billion. Assuming the loss of not more than two aircraft per year, the maximum expected insurance liability for any year is $2 billion. The Aviation Insurance Revolving Fund, containing $61.6 million as of September 30, 1995, is available for paying claims. There were no claims for losses of FAA-insured operations pending as of September 30, 1995. Since the beginning of the Aviation Insurance Program (including its predecessor, the Aviation War Risk Insurance Program, dating back to 1951), only four claims, ranging from $626 to $122,469, have been paid.

Canceled Appropriations. Under 31 U.S.C. 1552(a), an appropriation account which was available for obligation for a definite period is closed for all purposes at the end of the fifth fiscal year after its period of availability for obligation has expired. All obligated and unobligated balances in the account are then canceled. On September 30, 1995, FAA canceled undelivered orders (i.e., obligations) for the following closed appropriations: $6.5 million for Operations, $4.5 million for Facilities and Equipment, and $0.026 million for Research, Engineering, and Development. Under 31 U.S.C. 1553(b)(1), as implemented by OMB Circular No. A-34, after an appropriation is closed, any obligations or adjustments to obligations that would have been properly chargeable to that appropriation may be paid from an unexpired appropriation that is available for the same purpose. A single cumulative limit of no more than 1 percent of an unexpired appropriation may be used to pay any combination of obligations relating to closed accounts.

Note 23. Subsequent Events:

Accounts Receivable.

1. In FY 1995, the DOT Assistant General Counsel for Environmental, Civil Rights and General Law agreed with an OIG audit report's conclusion that FAA should rescind the entire State of Hawaii DOT FY 1992 discretionary grant funding of $7 million. An accounts receivable for this amount was not established in FY 1995 because official instruction to begin collection proceedings had not been received from the DOT General Counsel. A $7 million accounts receivable will be recorded when official departmental instruction is received.

2. In FY 1995, FAA offered Voluntary Separation Incentive Payments (VSIP) to employees, under section 3 of the Federal Workforce Restructuring Act of 1994 (P.L. 103-226). Employees could receive a lump sum payment of up to $25,000 under this offer. Section 3(d) of the Act provides that any employee who has received a VSIP and accepts employment with the Government (including employment under a personal services contract) within 5 years after the date of separation shall be required to repay the entire amount of the VSIP. Early in FY 1996, the OIG investigated compliance with this requirement in a sample of 20 of the 3,352 former FAA employees who accepted a VSIP. The OIG concluded that violations occurred in 17 of the 20 cases reviewed.

GLOSSARY OF ACRONYMS

A

AAM	Office of Aviation Medicine
AAS	advanced automation system
AAT	Air Traffic (FAA organization)
ABC	Activity-based cost
AC	advisory circular
ACFPR	aircraft catastrophic failure prevention research
ACH	automated clearing house
ACRA	Airman Certification and Rating Application
AD	advisory directive
ADR	alternative dispute resolution
ADS	automatic dependent surveillance
ADTN	area data network
AF	Airway Facilities (FAA organization)
AFB	Air Force Base
AFS	Airway Facilities Sector
AFS	Office of Flight Standards
AFSS	automated flight service station
AGATE	Advanced General Aviation Transport Experiments
AIA	Aerospace Industries Association
AIP	Federal Airport Improvement Program
AIT	Office of Information Technology
ALP	Airport Layout Plan
AMA	FAA Academy
AMASS	airport movement area safety system
AMC	Administrative Management Council
AME	Aviation Medicine Educator
AMI	Office of Information Services
AMIS	aircraft management information system
AML	FAA Logistics Center
AMT	aviation maintenance technician
ANICS	Alaskan NAS inter-facility communication system
AOAS	advanced oceanic automation system
AOPA	Airline Owners and Pilots Association
APMS	automated performance measurement system
AQP	Advanced Qualification Program
ARAC	Aviation Rulemaking Advisory Committee
ARPA	Advanced Research Projects Agency
ARTCC	air route traffic control center
ARTS	automated radar tracking system
ASDE	airport surface detection equipment
ASIS	aviation standards information system
ASOS	automated surface observing system
ASPM	Aviation Safety Program Manager
ASR	airport surveillance radars
ASSET	Aviation and System Enhancement Team
ASTA	airport surface traffic automation
ATA	Air Transport Association
ATC	air traffic control
ATCS	air traffic control specialists
ATCT	air traffic control tower
ATM	Asynchronous transfer mode
ATN	aeronautical telecommunications network
AVN	Office of Aviation System Standards, FAA
AWIS	airport weather and information system
AWOS	automated weather observing system

B

BAA	Broad Agency Announcement
BASA	bilateral aviation safety agreement
BPE	business process engineering

BPI	business process improvement
BRITE	bright radar indicator terminal equipment

C

CAAM	continued airworthiness assessment methodologies
CAMI	Civil Aeromedical Institute
CAMS	cost activity management system
CASFO	Civil Aviation Security Field Office
CBA	cost/benefit analysis
CBI	computer-based instruction
CDR	critical design review
CDS	controlled dangerous substances
CIP	Aviation System Capital Investment Plan
CMD	Center for Management Development
CNS/ATM	Communications, Navigation, Surveillance, and Air Traffic Management
COE	Centers of Excellence
CORN	computer resource nucleus
CRDA	Cooperative Research and Development Agreement
CRM	crew resource management
CSR	Civil Service Retirement
CT	computer tomography
CTAS	center-TRACON automation system
CWO	contract weather observer

D

D-BRITE	digital-bright radar indicator tower equipment
DAFIS	Departmental accounting and financial information system
DAT	Russian Department of Air Transport
DBE	disadvantaged business enterprise
DCCR	display channel complex rehost
DDC	direct digital connectivity
DME	distance measuring equipment
DMUX	data multiplexer
DOD	Department of Defense
DOT	Department of Transportation
DOT-PF	Department of Transportation public facilities
DOTS	dynamic oceanic tracking system
DSR	display system replacement
DSV	digital systems validation
DUAT	direct user access terminal
DVRS	digital voice recorder system

E

EAA	Experimental Aircraft Association
EDS	explosive detection system
EEO	equal employment opportunity
EFT	electronic funds transfer
EIS	environmental impact statement
EMC	electromagnetic compatibility
ETVS	enhanced terminal voice switch system

F

F&E	facilities and equipment
FAA	Federal Aviation Administration
FANS	Future Air Navigation System, ICAO program
FAR	Federal Aviation Regulations
FDIO	flight data input/output
FDIOR	flight data input/output remote
FDR	flight data recorder
FEMA	Federal Emergency Management Agency
FERS	Federal Employees Retirement System
FICO	Flight Inspection Central Operations
FMFIA	Federal Managers Financial Integrity Act
FONSI	finding of no significant impact

FOQA	flight operations quality assurance
FSCAP	flight safety critical aircraft parts
FSD	full-scale development
FSDPS	flight service data processing system
FSIB	Flight Standards information bulletin
FSS	Flight Service Station
FTE	full-time equivalency
FTR	Federal Travel Regulation
FTS	Federal telecommunications system
FY	fiscal year

G

GAC	French Direction Generale del Aviation Civile
GAO	General Accounting Office
GASDD	general aviation spatial disorientation demonstrator
GIRU	ground interrogator/receiver unit
GLCC	Great Lakes Composite Consortium
GNSS	global navigation satellite system
GPRA	Government Performance Results Act
GPS	global positioning system
GSA	General Services Administration

H

HBAT	Air Transportation Handbook
HBAW	Handbook Bulletin for Airworthiness
HBCU	Historically Black Colleges and Universities
HBGA	General Aviation Handbook
HIRF	high intensity radiated fields
HRM	Human Resource Management
HSI	horizontal situation indicator

I

IAPA	instrument approach procedures automation
IASA	International Aviation Safety Assessment Program
ICAO	International Civil Aviation Organization
ICSS	integrated communications switching system
IED	improvised explosive device
IFIO	International Flight Inspection Office
IHRWG	International Halon Replacement Working Group
ILS	instrument landing system
IPPS	integrated personnel and payroll system
ITWS	integrated terminal weather system
IVT	interactive video teletraining

J

JAA	Joint Aviation Authorities (European)
JAR	Joint Aviation Regulations

L

LAN	local area network
LDRCL	low density radio communication link
LINCS	leased interfacility NAS communications system
LLWAS	low level wind shear alert system
LORAN	long range navigation
LRANCM	long-range navigation C monitor

M

MALSR	medium-intensity approach lighting system with runway alignment indicator lights
MAR	managed arrival reservoir
MIFC	model 1 full capacity computer
MIR	management information reporting

MMAC	Mike Monroney Aeronautical Center
MMIC	monolithic microwave integrated circuit
MPS	maintenance processing system
MTBO	mean time between outages

N

NADIN	National airspace data interchange network
NAFTA	North American Free Trade Agreement
NAS	National airspace system
NASA	National Aeronautics and Space Administration
NATCA	National Air Traffic Controllers Association
NCP	noise compatible program
NDB	non-directional beacon
NDI	non-developmental item
NEXRAD	next generation radar system
NFPO	National Flight Procedures Office
NIMS	NAS infrastructure management systems
NISC	NAS implementation support contractor
NOAA	National Oceanic and Atmospheric Administration
NPIAS	National Plan of Integrated Airport Systems
NPR	National Performance Review
NPRM	notice of proposed rulemaking
NRP	National route program
NTIS	National Technical Information Service
NTSB	National Transportation Safety Board

O

OAP	oceanic automation program
OBT	organization behavior team
OCC	Operations Control Centers
ODMS	operational data management system
OIG	Office of the Inspector General, Department of Transportation
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OSHA	Occupational Safety and Health Administration
OST	Office of the Secretary
OTPS	oceanic traffic planning system

P

PAPI	precision approach path indicator
PASS	Professional Airways System Specialists
PCS	permanent change of station
PDS	pilot data storage
PFC	passenger facility charges
PFS	Partnership for Safety
PIN	personal identification number
POWER	performance and objective workload evaluation research
PRM	precision runway monitor
PTRS	program tracking and reporting subsystem
PTS	pre-training screen

R

R,E&D	Research, Engineering, and Development
RAA	Regional Airline Association
RCAG	remote center air/ground communications
RCLR	radio communications link repeater
RCLT	radio communications link terminal
RCO	remote communications outlet
RDVS	rapid deployment voice switch
REIL	runway end identification lights
RFP	request for proposal
RIT	Re-engineering Implementation Team, Human Resource Management

RMLR	radar microwave link repeater
RMMS	remote maintenance monitoring system
ROC	Regional Operations Center
RPM	revolutions per minutes
RRH	remote readout hygroghermometers
RTR	remote transmitter/receiver
RVR	runway visual range

S

SAS	situational awareness for safety
SATORI	systematic air traffic operations research initiative
SBIR	Small Business Innovation Research
SENEAM	Servicios a la Navegacion en el Espacio Aereo Mexicano
SIAP	standard instrument approach procedure
SID	standard instrument departure
SMO	System Management Office
SMT	self-managed team
SPAS	safety performance analysis system
SSRC	Staffing Standards Review Committee
STARS	standard terminal automation replacement system
STC	supplemental type certificate
SUP	suspected unapproved parts
SWIFT	selections within faster times

T

TAAS	terminal advanced automation system
TATCA	terminal air traffic control automation
TCAS	Traffic Collision Avoidance System
TCCC	tower control computer complex
TDA	US Trade and Development Program
TDMA	time division multiple access
TDWR	terminal doppler weather radar
TERPS	terminal instrument approach procedures
TMLT	television microwave link transmitter
TPDS	third party draft system
TRACON	terminal radar approach control
TRP	technology reinvestment project

U

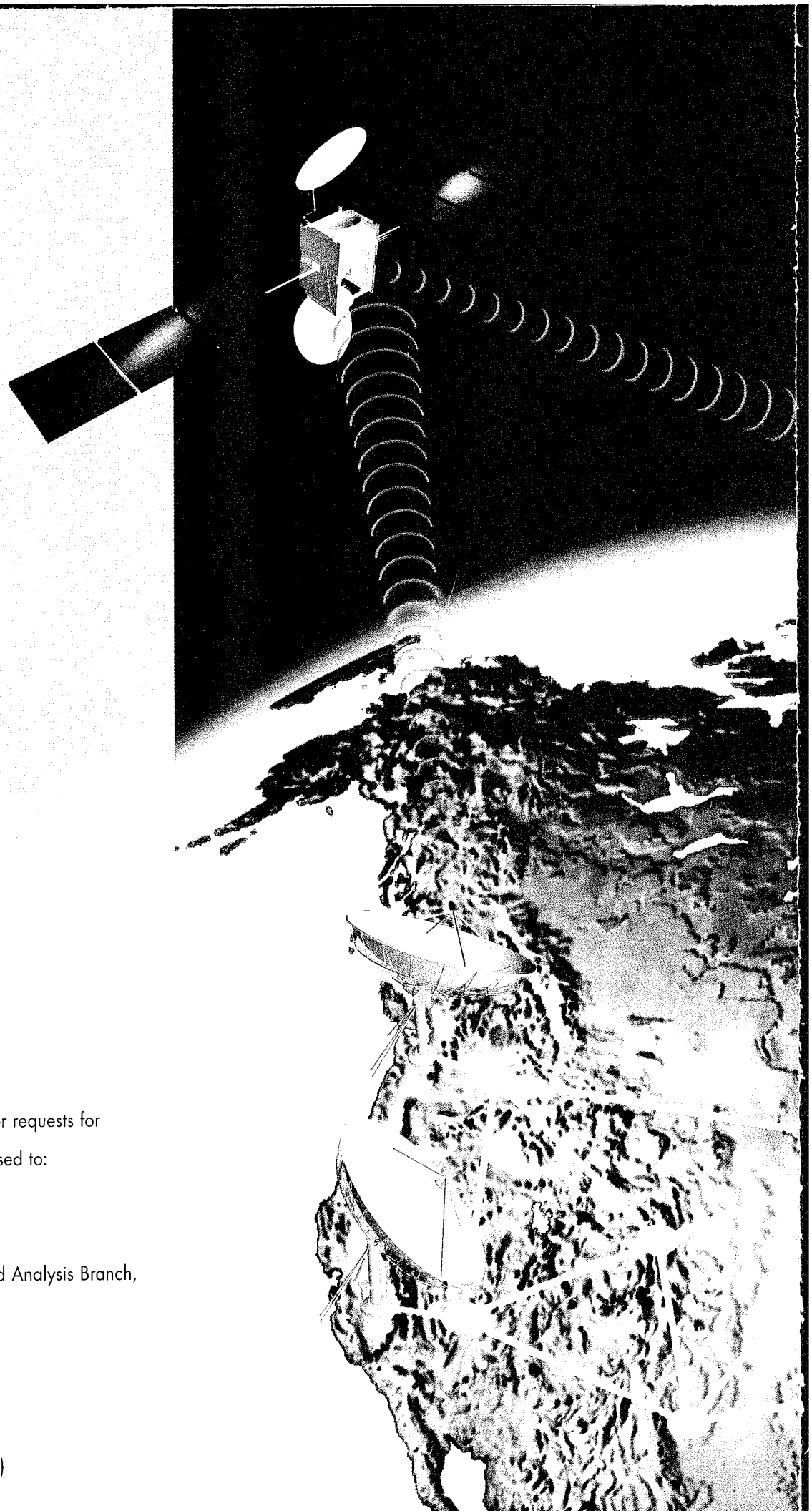
UAS	universal access system
UHF	ultra-high frequency
USACE	US Army Corps of Engineers
USAF	United States Air Force

V

VASI	visual approach slope indicator
VHF	very high frequency
VOR	VHF omnidirectional range
VOT	VHF omnidirectional range test
VSCS	voice switching and control systems

W

WAAS	wide area augmentation system



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